RON BARBER
2ND DISTRICT, ARIZONA

COMMITTEES:
HOUSE ARMED SERVICES
TACTICAL AIR AND LAND FORCES
READINESS

HOMELAND SECURITY
OVERSIGHT AND MANAGEMENT
EFFICIENCY, RANKING MEMBER

SMALL BUSINESS
ECONOMIC GROWTH, TAX AND
CAPITAL ACCESS
AGRICULTURE, ENERGY AND TRADE

Congress of the United States
House of Representatives
Washington, DC 20515–0302

WEBSITE:
www.barber.house.gov

1029 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE (202) 225-2542
FAX (202) 225-0378

TUCSON OFFICE:
2945 E. FORT LOWELL, SUITE 211
TUCSON, AZ 85712
PHONE (520) 881-3588
FAX (520) 322-9490

SIERRA VISTA OFFICE:
77 CALLE PORTAL, SUITE B-160
SIERRA VISTA, AZ 85635
PHONE (520) 459-3115
FAX (520) 459-5419

FACEBOOK:
facebook.com/RepRonBarber

TWITTER:
twitter.com/RepRonBarber

February 12, 2014

Ms. Laura Vaught
Associate Administrator for Congressional and Intergovernmental Relations
Enviornemal Protection Agency
1200 Pennsylvania Avenue NW
Room 3426 ARN
Washington, DC 20460

Dear Ms. Vaught,

I am writing on behalf of my constituent, Mr. Chuck Martin, who would like his opinions to be addressed concerning the Rosemont Mine. As courtesy to our constituent, we are forwarding his concerns for your review.

Please review Mr. Martin's circumstances and respond to me with the appropriate information. Should you have any questions, please do not hesitate to contact me or Sean Goslar in my Tucson office at (520) 881-3588 or via email at Sean.Goslar@mail.house.gov.

Thank you for your assistance.

Sincerely Yours,

Ron Barber

Ron Barber
Member of Congress

SG

Rosemont Copper Project #24544

January 22, 2014

Responsible Official:

Mr. Jim Upchurch
Forest Supervisor
Coronado National Forest, Nogales Ranger District

Objection:

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 (2013i)). Attachment #1*

In *Volume 6 - Appendix G Summary of Response to Public Comment, Groundwater Quality and Geochemistry Page G-36,* in the last response on the page - regarding the effects of the pit lake on water quality and mitigation of these effects, it states: (Highlights and underline added)

"**The pit lake is modeled as <u>exceeding</u> some surface water and aquifer water standards** as described in the FEIS (Chapter 3, Groundwater Quality and Geochemistry), and effects of those modeled **water quality exceedances on wildlife are also analyzed in the FEIS** (Chapter 3, Biological Resources). As discussed in the Groundwater Quality section, neither aquifer nor surface water standards have binding regulatory standing with respect to the pit lake. **However, this does not forestall the need for the Forest Service to analyze the potential effects on wildlife, including bird species.**" *Attachment #2*

> The risk factors to wildlife, specifically bird species, are not 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 does not include the review, study, analysis, discussion or 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 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 does not include the review, study, analysis, discussion or 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
>
> The FEIS does not include the review, study, analysis, discussion or consideration of what impacts and effects that the potential short or long term mitigation measures could have to the public, the surrounding private property owners or the users of the adjacent Forest Service land and BLM land.

Quotations from the FEIS: (Highlights added) Attachment #3

The FEIS states on Page 364: "The mine pit lake, because of its contact with exposed rock formations, could develop hazardous water quality conditions, which could cause impacts to groundwater, **birds** and wildlife."

Regarding nitrogen residue, on Page 385 the FEIS states: "The exposure pathway for this residue in the pit lake would be **limited to birds and wildlife that could readily access the pit lake."** Further down in the paragraph: "Under these scenarios, estimates suggest **that if chronic exposure occurred there could be negative impacts to wildlife and aquatic species due to ammonia levels in the lake."**

In the comparison to the pit lake with Surface Water Quality Standards on Page 389, it states: "The mine pit lake is not a navigable water and is not regulated under surface water quality regulations. **However, surface water quality standards are specific to wildlife use and are therefore useful solely as a tool for assessing the potential impacts to wildlife."**

On the top of Page 390 it states: **"Wildlife most likely to be indirectly impacted includes any animals that prey on insects or birds that have come in contact with the water in the pit lake." Acute exposure by avian species is the most likely scenario to occur**, given the depth and isolation of the pit lake and the general inaccessibility by wildlife. Chronic exposure is unlikely to occur directly, but **chronic exposure could occur indirectly through predation on insects."**

Further down this page in the section comparing the pit lake to surface water quality standards, the FEIS indicates that the geochemistry of the pit lake water quality could exceed surface water standards for **acute exposure for copper and zinc and chronic exposure for cadmium, copper, lead, mercury selenium and zinc** depending on the scenario.

Given these statements, 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"**, but it does not.

2011 Comments: (Highlights added) *Attachment #4*

My original 2011 comment letter to the DEIS had the same questions comments and concerns as this objection. The entire letter is attached. I have included a portion of that letter for ease of reference:

Still thinking about the CAP issue, I went back to the table with the exhibits regarding the ground water impact. That's when I realized there was an issue which I haven't heard mentioned very much; the "pit lake". I noticed the pit lake on the section when I was looking to see how the aquifer around the mine would be affected. I was surprised how deep the water in the lake will eventually be. I was told that the surrounding aquifer will drain into the pit, a sump, and while there is mining, the pit will be de-watered. After secession of operation, the lake would form. Several new questions came to mind.

1. *I asked what will happen to the water that is pumped from the pit while it is de-watered. How much would there be and how would it be used? What is the water quality? The person at the table was not able to answer the questions.*

2. *I asked about the water quality in the 'pit lake" after it fills? I was told that the good news is that the existing rock will help to keep the lake less acidic than similar mine lakes. I was also told something about the water meeting "water quality standards", but "It probably wouldn't be a good idea to let the water touch your skin". This spawned another question.*
3. *According to the exhibit this will be a large and deep body of water. I asked what will be done to keep water fowl, especially migratory water fowl from using the "pit lake". I was told that this item is not addressed in the DEIS and would be addressed in the FEIS.*

I have gone back to see if these issues are addressed in the DEIS. I did not find these issues addressed in the Executive Summary, so I searched all of the DEIS documents.

1. *I did find the answer in Volume 1, Chapters 2, Water Supply, Page 29 and Chapter 3, Ground Water Quantity, Page 230 that the water pumped from the pit would be used for processing. The volume is 16-27,000 acre-feet.*
2. *I found the reference to the Predicted Geochemistry of the pit lake discussed in Volume 1, Chapter 3 on Pages 292-294. On Page 294, it states that Silver, Cadmium, Copper, Lead and Mercury "exceeds" the surface water standards under all four alternatives. The final paragraph says that the potential Impacts are analyzed in the "Biological Resources" section of this "FEIS". Is this a typo or is the FEIS where the issue will be addressed?*
3. *Neither Water Fowl nor Migratory Water Fowl are listed in Index or Glossary and there is no reference that I could find in the entire document. The DEIS says that the lake will ultimately have a surface area of 213 acres on Page 291. That is a surface area larger than Rainbow Lake and several other lakes in Arizona.*

   *One reason that waterfowl may not be listed can be found in the Draft Migratory Bird Analysis SWCA 2011d. The text on Page 19 states that "**Because there is no significant standing water in the proposed project area, water birds were filtered out from further consideration**". Species listed as waterfowl in Table 3 on the same page are shown as "N - Not analyzed in detail within the Migratory Bird Report" under the Evaluation Section. A note at the end of the table states "Species that are categorically excluded are waterfowl (i.e., no habitat), rare migrants... This may be a true statement for the existing condition, but will not be true after mining is concluded.*

I think the issues, impact and mitigation related to the "pit lake" need to be more thoroughly discussed. I am concerned that they won't be addressed until the Final EIS.

Furthermore, I believe that the Draft EIS is being rushed and is not complete enough to give cogent comments. ***I also believe that all of the impacts and specific mitigation measures for those impacts need to be provided in a Revised DEIS so that the public has a chance to see and comment on what could eventually be developed on the site and what the impacts of that development will be.*** *I make these statements for the following reasons:*

Comments 1-4 not shown.

5. ***Inadequate information.*** *Other than water quality associated with the aquifer and the impact to the Special Species, the remaining issues, impacts and mitigation related to the "pit lake" are not addressed.* ***What are all of the biological impacts? What are the long term impacts? What are the mitigation methods? How will the public be affected?***

Forest Service Response:

At several of the meetings, I heard Mr. Upchurch say that substantive comments would get a response. I have still not gotten a response from anyone, so I have reviewed the FEIS to see if I could find answers to my questions, concerns and comments.

Volume 6 - Appendix G Summary of Response to Public Comment, Groundwater Quality and Geochemistry Page G-36, in the last response on the page - regarding the effects of the pit lake on water quality and mitigation of these effects, would seem to address my questions and comments, but the FEIS still does not fulfill **"the need for the Forest Service to analyze the potential effects on wildlife, including bird species."** *Attachment #1*

It appears that there is a general response to similar questions regarding impacts to migratory birds. On *Page G-41 Public Concern Statement,* there are statements about impacts to migratory birds including: "The Coronado National Forest should further analyze the project's potential impact to all avian species in the project area, including migratory birds and raptors..." *Attachment #5*

It is important to note that the responses would only address **"migratory birds and the habitat of species of concern <u>within the analysis area</u>",** which based on reports has **excluded all water birds**.

Information found in FEIS: (Highlights and underlines added)

1. Information found, no response needed.

2. *Predicted Geochemistry*

   This question was answered by the Forest Service in the response in the Objection section above. "**The pit lake is modeled as <u>exceeding</u> some surface water and aquifer water standards** as described in the FEIS (Chapter 3, Groundwater Quality and Geochemistry), and effects of those modeled water quality **<u>exceedances</u>** on wildlife **are also analyzed in the FEIS** (Chapter 3, Biological Resources). As discussed in the Groundwater Quality section, neither aquifer nor surface water standards have binding regulatory standing with respect to the pit lake. **However, this does not forestall the need for the Forest Service to analyze the potential effects on wildlife, including bird species."** *Attachment #2*

   There is no short term analysis of the pit lake water quality. The modeling in the FEIS is for the 200-year status of the pit lake. Given that it is known that the **"pit lake is modeled as <u>exceeding</u> some surface water and aquifer water standards"** in 200 years when the lake level has stabilized, it would seem that modeling for the pit lake water quality should be done while the pit lake is filling, especially since there is the potential for water birds to be attracted to the pit lake.

   Although the potential effects of the water quality are discussed for other wildlife, there is nothing in the FEIS specific to the effects on bird species such as waterfowl, migratory waterfowl or other birds that may be associated with "standing water".

3. **The words waterfowl or migratory waterfowl are not found anywhere in the FEIS**. Although there is a definition of Migratory Birds on Page 1335, which is used throughout the FEIS that would seem to include these birds, waterfowl or migratory waterfowl are still excluded from the FEIS.

– "**Migratory Birds –** Species that migrate north each spring to breeding grounds in the United States and Canada, then fly south the bulk of the year in Central and South America. Many common song birds and neo-tropical birds." *Attachment #6*

A. As noted in my original comment letter above, birds that were described as waterfowl have been excluded from the FEIS, both in the *Draft Migratory Bird Analysis SWCA (2011d)*, Page 19 and *Migratory Bird Analysis SWCA (2013i)*, Page 4 for the same reason: **"Because there is no significant standing water in the proposed project area, water birds were filtered out from further consideration"**.

1. It should be noted that for the migratory bird study, the analysis area is "The analysis area is defined as the project area (not found in the definitions section of the FEIS) plus the area of potential effects for each species discussed in subsequent sections of this report." *(SWCA 2011d)* The *Analysis Area for Biological Resources Figure 71, Page 574* is only 145,190 acres, about 223 square miles. The analysis area does not extend more than about 16 miles in any direction from the future pit lake.

   This is not a large analysis area considering the thousands of miles that "Migratory Birds" travel and it seems to be an unusually small area for a migratory bird analysis area. By contrast, the analysis areas for *Air, Figure 38, Visual Resources, Figure 80, Wilderness Resources, Figure 89, Transportation, Figure 102, and Cultural Resources, Figure 110* are much larger. In fact, the Socio-economic Analysis Area covers the entire area of Pima, Santa Cruz and Cochise Counties combined. **If any one of these other analysis areas were used for migratory birds, several species that were filtered out of the reports would be found.** *Attachment #7*

   Approximately 25 miles southwest of the proposed pit, 3 miles southwest of the Forest boundary, is Patagonia Lake. It is about 18 miles from the south edge of the Biological Analysis Area. Patagonia Lake is 260 acres in size and at 4050 feet of elevation. The FEIS says pit lake will be 213 acres in size and at 4250 feet of elevation. Patagonia Lake would provide a good basis for comparison in the analysis of bird species that can found in the region.

	Area	**Elevation**
Pit Lake	213 ac.	4250'
Patagonia Lake	269 ac.	4050'

2. It should also be noted that the *Santa Rita Mountains (ebird2013b)* report indicated a total of **287** species observed, while the migratory bird reports include only 106 species, of which only **70** species received further

evaluation. There are **quadruple** the number of bird species on the ebird list for the Santa Rita Mountains.
Attachment #8

B. Will there be **"significant standing water"** habitat in the project area? Based on the Tetra Tech report, there will be habitat, the pit lake, after the mine is closed.

1. It appears that after only 10 years the pit lake will be approximately 500 feet deep and at 20 years the pit lake will be at approximately 600 feet deep *(Tetra Tech 2010(c), Illustration 5.03)*. At these depths, it appears that the lake will have a surface area of approximately **43 acres in 10 years and 65 acres in 20 years**. *(Tetra Tech 2010(c), Illustration 5.02)*. *Attachment #9*

2. In 20 years the pit lake would have the **fourth largest surface area** compared to the other lakes in southern Arizona and ultimately at 213 acres, it will have the **second largest surface area**, with only Patagonia Lake being larger.

3. In the region of the pit lake, bodies of water no matter what size, will attract species of waterfowl, migratory waterfowl or other birds that may be associated with "standing water". These species could include bird species that could become either **"animals that prey on insects or birds that have come in contact with the water in the pit lake"**, such as **ducks, geese, terns, loons, teals, egrets, herons, kites, hawks, sandpipers, swifts, nighthawks, flycatchers, larks, etc.**

Inadequate information:

5. The questions from my 2011 letter are still unanswered. These are unresolved issues in the FEIS and there needs to be more analysis. ***What are all of the biological impacts? What are the long term impacts? What are the mitigation methods? How will the public be affected?***

Summary:

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 (2013i))*. *Attachment #1*

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 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

The FEIS needs to include the review, study, analysis, discussion and consideration of what impacts and effects that the potential short or long term mitigation measures could have to the public, the surrounding private property owners or the users of the adjacent Forest Service land and BLM land.

Respectfully,

Chuck Martin
841 N. Pantano Road
Tucson, Arizona
520-298-2948
pantano841@aol.com

Reviewing Officer, Southwest Region, 333 Broadway SE, Albuquerque, NM. 87102

ATTACHMENT #1

D. THE FOREST SERVICE SHALL:

3. Within the NEPA process, evaluate the effects of agency actions on migratory birds, focusing first on species of management concern[1] along with their priority habitats and key risk factors. To the extent practicable:

   a. Evaluate and balance long-term benefits of projects against any short- or long-term adverse effects when analyzing, disclosing, and mitigating the effects of management.

   b. Pursue opportunities to restore or enhance the composition, structure, and juxtaposition of migratory bird habitats in the project area.

   c. Consider approaches, to the extent practicable, for identifying and minimizing take that is incidental to otherwise lawful activities. (Forest Service 2008:6–7)

There are several examples of approaches for identifying and minimizing "take" (see point D3c, above) in this section, some of which will be discussed below.

The Fish and Wildlife Coordination Act is primarily geared toward empowering and providing funding to state agencies. The species lists referenced in the act are in the document "Birds of Conservation Concern" (USFWS 2008). Because this document targets State agencies, but this is largely a Federal action, the lists were not used in the migratory bird analysis, with the following exception: USFWS (2008) uses Bird Conservation Regions of Partners in Flight (PIF) to provide the lists, and our direction is to use PIF (2006). It should be noted, however, that the Bird Conservation Areas differ between USFWS (2008) and PIF (2006), although most of the species within the same physiographic provinces are the same on both lists.

In order to address the requirements set forth in various Federal laws, regulations, and policies, the Southwestern Regional Office of the Forest Service recommends that the Coronado National Forest (the Coronado) analyze the effects on (1) species lists referred to in EO 13186, (2) Important Bird Areas (IBAs) identified by the National Audubon Society and American Bird Conservancy, and (3) important overwintering sites. This report is an attempt to evaluate the effects, if any, of the proposed project on migratory birds, as well as to recommend measures to minimize or mitigate the effects of the proposed project.

Associated Documents

The evaluation of the effects of the proposed action is being done to meet the requirements of NEPA. Information on plants and animals used for alternative development and disclosures of effects for the environmental impact statement (EIS) is found in a series of biological documents. First, the biologists' report on the affected environment (SWCA 2013a) establishes and identifies the analysis area, significant biological issues, potentially affected environments, and species to be considered for analysis in the other associated documents. Also, the report discusses the general, holistic effects on plant and animal communities in the proposed analysis area, including those not adequately addressed by the other associated documents (e.g., species not listed in other documents, such as some species of state and county conservation concern).

The other associated documents are as follows: (1) migratory bird analysis (this report), (2) biological assessment (for threatened and endangered species), (3) biological evaluation (for Regional Forester's and Bureau of Land Management (BLM) Sensitive species), and (4) management indicator species report

[1] This is not defined. Refer to the "Species Identification" section for our interpretation, based on the regulatory framework.

ATTACHMENT #2

Public Concern Statement	Response
The Coronado National Forest should revise the water quality analysis to include a more rigorous examination of the potential for seepage or leaching from waste rock, heap leach, and pit lake facilities, or from blasting, disclosing the full chemistry of the seepage, the potential for acid mine drainage, and the relationship of water quality to water quality standards, and should discuss appropriate measures to prevent impacts to surface and ground waters, including a long-term monitoring plan. The Coronado National Forest should not allow the Rosemont Copper project to move forward, because of water quality impacts from toxic metals leaching into the groundwater and surface water	Impacts to surface water and groundwater quality are fully analyzed in Chapter 3, Surface Water Quality and Chapter 3, Groundwater Quality and Geochemistry. This analysis includes assessments of runoff water quality, sediment loads, geomorphology, and the expected success of any mitigation measures like Best Management Practices. Additional baseline surface and groundwater quality has also been conducted and incorporated into the FEIS, as has a complete description of the types and durations of all geochemical tests run by Rosemont. An independent review of surface water and sediment modeling methods was also conducted and the results have been included in the FEIS, as have independent reviews in response to public comments of the geochemical modeling and assumptions related to the potential for groundwater contamination and predicted pit lake water quality, including the need for mineralogical analysis; details of these reviews are included in the project record. Additional analysis has also been incorporated to assess impacts to Outstanding Arizona Waters in Lower Davidson Canyon and Cienega Creek, see Chapter 3, Seeps, Springs, and Riparian Areas. The Forest has also reviewed and recalculated the applicable surface water quality standards and clearly identified the hardness values used to calculate those standards, and clearly detailed the arsenic standard used for analysis and why it was selected. The Forest has also considered the Rosemont ore body in relation to other mines in Arizona that have had water quality problems, and has detailed this comparison in Chapter 3, Groundwater Quality and Geochemistry. Details of all control practices like liners or leak detection/containment systems specified by the aquifer protection permit are also now fully detailed in Chapter 3, Groundwater Quality and Geochemistry; however, discussion of treatment or remediation is inappropriate, as any actual contamination event is speculative based upon the best available analysis. Geochemical modeling and analysis was based on a suite of tests, including MWMP, SPLP, column tests, and humidity cell tests; these tests are described in aggregate in Chapter 3, Groundwater Quality and Geochemistry with full details available in the project record. While some detection limits for various constituents exceed the water quality standards for certain tests, the entire suite of geochemical tests contains samples at or below the applicable water quality standards and were considered in the geochemical modeling. Recognizing that predictions do not mean that unexpected effects will not occur, monitoring plans are also included as an attachment to the FEIS.
The Coronado National Forest should evaluate and disclose the risk of production wells drawing the Sierrita sulfate plume into wells within the cone of depression.	The analysis contained in the FEIS (Chapter 3, Groundwater Quality) regarding the potential impact of mine supply pumping on the Sierrita sulfate plume has been modified. Two changes have been made. First, a more full description has been added of the location of the sulfate plume and the expected remedy to be employed by Sierrita. Second, a further analysis of flow vectors with and without mine water supply pumping has been considered to determine whether the mine supply pumping would have a substantial effect on the sulfate plume. The Forest Service believes the results of the modeling conducted is sufficient to analyze the effect of mine supply pumping on the plume, as it fully describes the changes to gradient and flow direction that are expected to occur.
The Coronado National Forest should address effects of the pit lake on water quality, water table, wildlife, etc. and provide information on mitigation of these effects.	The pit lake is modeled as exceeding some surface water and aquifer water quality standards as described in the FEIS (Chapter 3, Groundwater Quality and Geochemistry), and the effect of those modeled water quality exceedances on wildlife are also analyzed in the FEIS (Chapter 3, Biological Resources). As discussed in the Groundwater Quality section, neither aquifer nor surface water quality standards have binding regulatory standing with respect to a pit lake. However, this does not forestall the need for the Forest Service to analyze the potential effects on wildlife, including bird species.

ATTACHMENT #3

whether the geochemical modeling used is appropriate and acceptable. A further question is the appropriate standard with which to compare arsenic concentrations, as there is a discrepancy between the arsenic standard set by the EPA for drinking water and the standard set by the State of Arizona for protection of groundwater quality. This discrepancy has been further described in the FEIS (see the "Appropriate Standards for Comparison of Groundwater Quality" part of this resource section).

Additional mitigation measures have been incorporated into the document and assessed for effectiveness at reducing impacts (see "Mitigation Effectiveness" part of this resource section, as well as appendix B).

Monitoring has been incorporated into the mitigation and monitoring plan (see appendix B) in order to address uncertainty associated with geochemistry, acid rock drainage, and the potential for seepage from the waste rock facility (see the "Mitigation Effectiveness," "Monitoring Intended to Assess Seepage Predictions," and "Monitoring Intended to Assess Geochemical Predictions" parts of this resource section).

Issues, Cause and Effect Relationships of Concern

Mine operations involve several components that have the potential to affect groundwater. With certain geology and rock types, precipitation falling on waste rock and tailing facilities has the potential to leach metals from the rock, which could potentially infiltrate the aquifer and impact groundwater quality. Hazardous materials used at the mine could be released to the environment, which could cause contaminated runoff or directly infiltrate the aquifer. The mine pit lake, because of its contact with exposed rock formations, could develop hazardous water quality conditions, which could cause impacts to groundwater, birds, and wildlife.

One significant issue was identified with respect to groundwater quality. Issue 3C relates to groundwater quality in the Cienega Basin, which may be impacted by the mine operations. The issue, with specific factors and units of measure for determining environmental consequences, is listed below.

Issue 3C: Groundwater Quality

Construction and operation of the mine pit, waste rock, and leach facilities have the potential to exceed Arizona Aquifer Water Quality Standards. The mine pit could result in the creation of a permanent pit lake, which has the potential to concentrate dissolved metals and toxins and may lower pH levels. Likewise, disposal of waste material in surface facilities such as tailings, waste rock, and leaching operations could potentially contribute to degradation of the aquifer.

Issue 3C Factors for Alternative Comparison

1. Ability to meet Arizona Aquifer Water Quality Standards at points of compliance designated in the aquifer protection permit
2. Ability to demonstrate best available demonstrated control technology[2]

[2] Use of best available demonstrated control technology is required by the aquifer protection permit. The purpose is to employ engineering controls, processes, operating methods, or other alternatives to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer.

most toxic to aquatic organisms, and the toxicity varies depending on both pH and temperature. Although reactions can vary greatly due to site-specific conditions, previous studies have estimated that approximately 87 percent of nitrogen residue exists as nitrate, 11 percent exists as ammonia, and 2 percent exists as nitrite (Ferguson and Leask 1988).

The fate and transport of any nitrogen residue to groundwater or surface waters is of concern, as there are aquifer and surface water quality standards for nitrate, nitrite, and ammonia. There are two general areas in which nitrogen residue could be present within the mine site: within the pit, and within the waste rock facility. Within the pit itself, any residue transported by precipitation and infiltrating to groundwater would eventually end up in the pit lake that would form after closure. Blasting residue was not incorporated into the pit lake geochemical modeling (Tetra Tech 2010c). However, estimates suggest that if nitrogen residue were present in the pit, were to persist over the entire life of them mine, and were to persist and accumulate in the forming pit lake, concentrations of total nitrogen ranging from 6.7 to 33.3 mg/L could occur. This estimate assumes a range of explosive residue from 0.2 to 1 percent, assumes that approximately three percent of the total residue would remain in the pit rather than the waste rock facility, and that the pit lake would have a volume of about 1,000 acre-feet, which is expected to occur by about 20 years following mine closure (SWCA Environmental Consultants 2013e).

The exposure pathway for this residue in the pit lake would be limited to birds or wildlife that could readily access the pit lake. As discussed elsewhere in this section, the surface water quality standards are not applicable to the pit lake from a regulatory perspective, but can be used to qualitatively assess potential impacts to exposed birds or wildlife. In this case, the most restrictive numeric surface water standards are for ammonia for warmwater aquatic and wildlife. Depending on temperature, the acute standard ranges from 6.95 to 8.4 mg/L, and the chronic standard ranges from 0.773 to 2.43 mg/L. Ammonia concentrations in the pit lake could range from 0.74 to 3.7 mg/L (SWCA Environmental Consultants 2013e). Under these scenarios, estimates suggest that if chronic exposure occurred there could be negative impacts to wildlife and aquatic species due to ammonia levels in the pit lake.

An additional concern is nitrogen residue that would be entrained with the waste rock removed from the pit that would then be exposed to surface water runoff. Unlike residue remaining in the pit, any impacts from waste rock runoff could potentially leave the mine site and impact downstream waters. Stormwater would come into contact with only a small fraction of the waste rock. Most of the waste rock slopes would be covered by salvaged soil during reclamation, preventing stormwater from contact with residual nitrogen that might be entrained with the waste rock. Stormwater would likely only come into direct contact with waste rock in the conveyance channels along the benches, which represents a small percentage of the entire waste rock volume, with contact persisting for a relatively short amount of time. However, for erosion control some areas of the waste rock facility might have a final cover of waste rock, not salvaged soil, and exposure of stormwater to explosive residue could occur in these areas. Estimates suggest that concentrations of total nitrogen ranging from 1.4 to 7.2 mg/L could occur in runoff (SWCA Environmental Consultants 2013e). This estimate assumes that approximately 5 percent of the waste rock represents surface or near-surface rock that could come into contact with stormwater runoff, and that contact could occur over the entire area of the waste rock facility.

There are no applicable surface water quality standards for nitrate, nitrite, or ammonia in the ephemeral washes immediately downstream. If infiltration of this runoff occurred, estimates suggest that numeric aquifer water quality standards for nitrate (10 mg/L) and nitrite (1 mg/L) would not be exceeded (SWCA Environmental Consultants 2013e).

Constituent	Numeric Arizona Aquifer Water Quality Standards	Scenario 1: Low Geochemical Loading	Scenario 2: Average Geochemical Loading	Scenario 3: High Geochemical Loading	Scenario 4: Average Loading with Bolsa Quartzite
Magnesium	No standard	22.7	25.7	30.1	25.6
Manganese	No standard	0.229	0.255	0.243	0.254
Mercury	0.002	0.002	0.001	Not present	Not present
Molybdenum	No standard	0.137	0.150	0.192	0.154
Nickel	0.1	0.005	0.006	0.007	0.010
pH	No standard	8.1	8.0	8.0	8.0
Potassium	No standard	5.1	5.7	6.3	5.4
Selenium	0.05	0.013	0.014	0.016	0.014
Silver	No standard	0.004	0.004	0.005	0.004
Sodium	No standard	31.9	35.9	38.6	35.3
Sulfate	No standard	330.6	374.1	518.5	375.8
Thallium	0.002	**0.005**	**0.006**	**0.007**	**0.006**
Total Dissolved Solids		527	589	751	590
Uranium		0.005	0.006	0.006	0.006
Zinc		0.745	0.847	0.959	0.862

Notes:
All results are in mg/L.
Boldfaced numbers indicate an exceedance of the aquifer water quality standard.
Not present = Constituent was not modeled to be present at concentrations above three decimal places.

Potential for Acid Lake Formation— Based on the geochemical modeling, none of the modeled scenarios create acidic lake conditions.

Qualitative Comparison of Pit Lake with Aquifer Water Quality Standards— Under Arizona laws, the pit lake is not considered to be a facility discharging to groundwater; therefore, aquifer water quality standards are not applicable. However, these standards provide a point of comparison for the water quality in the pit lake. The geochemistry of the mine pit lake results from the contributing inflow water quality, the interaction with mine wall rock, and evaporation. Geochemical modeling indicates that thallium exceeds the numeric Arizona Aquifer Water Quality Standards under all four scenarios modeled. Thallium has not been observed at these levels in the background ambient groundwater samples collected in the project area and therefore is likely elevated due to contact with and reaction to the exposed rock.

Qualitative Comparison of Pit Lake with Surface Water Quality Standards— The mine pit lake is not a navigable water and is not regulated under surface water quality regulations. However, surface water quality standards are specific to wildlife use and are therefore useful solely as a tool for assessing the potential impacts to wildlife. The comparisons provided below are based on the acute and chronic surface water standards designated for warmwater aquatic species and wildlife. Note that some standards change as water hardness changes; a hardness of 355 mg/L (as calcium carbonate [$CaCO_3$]) was used to calculate standards for comparison to pit lake water quality (Garrett 2012c). Surface water standards have been developed for both acute and chronic exposure. Wildlife groups that are most likely to be directly impacted by toxins potentially present in the mine pit lake include

invertebrates (i.e., insects, etc.) and birds. Wildlife most likely to be indirectly impacted includes any animals that prey on insects or birds that have come in contact with the water in the mine pit lake. Acute exposure by avian species is the most likely scenario to occur, given the depth and isolation of the pit lake and general inaccessibility by wildlife. Chronic exposure is unlikely to occur directly, but chronic exposure could occur indirectly through predation on insects.

Geochemical modeling indicates that some surface water quality standards for acute exposure to warmwater aquatic species and wildlife could be exceeded:

- Copper exceeds the acute surface water standard for two scenarios. Copper has not been observed in background ambient groundwater concentrations at these levels.
- Zinc exceeds the acute surface water standard under all four scenarios. The concentrations modeled for the pit lake (0.745 to 0.959 mg/L) appear to be largely the result of the concentration of zinc naturally occurring in groundwater samples collected from near-pit wells (0.694 mg/L). The background concentration also exceeds the acute surface water standard for zinc.

Geochemical modeling also indicates that some surface water quality standards for chronic exposure to warmwater aquatic species and wildlife could be exceeded:

- Cadmium exceeds the chronic surface water standard under all four scenarios. Cadmium has not been observed in background ambient groundwater concentrations at these levels and therefore is likely elevated due to contact with and reaction to the exposed rock.
- Copper exceeds the chronic surface water standard under all four scenarios. Copper has not been observed in background ambient groundwater concentrations at these levels and therefore is likely elevated due to contact with and reaction to the exposed rock.
- Lead exceeds the chronic surface water standard for three scenarios. Lead has not been observed in background ambient groundwater concentrations at these levels and therefore is likely elevated due to contact with and reaction to the exposed rock.
- Mercury exceeds the chronic surface water standard for at least two scenarios. Mercury has not been observed in background ambient groundwater concentrations at these levels and therefore is likely elevated due to contact with and reaction to the exposed rock.
- Selenium exceeds the chronic surface water standard under all four scenarios. The concentrations modeled for the pit lake (0.013 to 0.016 mg/L) appear to be partially the result of the concentration of selenium occurring in groundwater samples collected from near-pit wells (0.00212 mg/L), although the modeled concentrations are substantially higher. The background concentration also exceeds the chronic surface water standard for selenium.
- Zinc exceeds the chronic surface water standard under all four scenarios. As noted above, this appears to be largely the result of the concentration of zinc occurring naturally in groundwater samples collected from near-pit wells, which also exceeds the chronic surface water standard for zinc.

Potential impacts to biological resources based on these exceedances are analyzed in the "Biological Resources" resource section of this chapter.

ATTACHMENT #4

December 22, 2011

To whom it may concern,

I am a second generation Tucsonan who is a concerned citizen. I try to make informed decisions about issues related to the future of the region, so I take time to do research.

I have been following the news about Rosemont since the first announcement of the proposed mine. One of the first things I did was to check out their web site. My early concerns were about how this mine would be different than other mines in Arizona.

I took the time to attend one of the initial meetings at Rincon High School to hopefully get additional information. I learned about the basics of the mine, the "modern" processes that would be used and that I would have to wait for the Draft EIS to find out the specific impacts the mine would have on the region and what mitigation, if any, would be required.

Soon after the meeting, I received a brochure in the mail from Rosemont. It included a card with two choices: "I support the mine" and "I have questions." I thought about potential concerns that I had at that point and checked the second box. I wrote what I thought were two valid questions. 1) What improvements are planned for SR 83 to mitigate the increased traffic and 2) How will the mine tailings would be mitigated so that they wouldn't look like other Arizona mines. I never received a response.

Several months later I took the time to stop by the Rosemont booth at the El Tour Expo and I told the representatives that I had sent in the card and that my questions had not been answered. They said that they could answer my questions. They told me that the only improvements planned for SR 83 are at the intersection with the mine entrance road. I let them know of my concerns regarding the safety with the increased traffic, especially the truck shipments. They also told me that the plans were to use harvested soil from the site to cover the waste rock and tailings slopes. The slopes would then be replanted with a seed mix that the U of A was working on. (The next few times I traveled past the mine site on SR83 I looked at the road cuts and noticed that there seems to be very little "soil" in this area. I wondered about this statement.)

I was notified by mail that the Draft EIS was published and there would be a meeting at Palo Verde High School. Before the meeting, I went online and reviewed the Executive Summary in the DEIS. It appeared that my initial concerns were still valid. I attended the public meeting hoping that these issues would be addressed in more detail.

I went to the meeting and started in the display area. After reading the Executive Summary of the DEIS, I had some additional questions that I hoped I could get answers for.

1. The first question regarded the draw-down of the west aquifer and the number of well that were affected. The Executive Summary did not discuss the mitigation of the draw-down. It made me wonder why the mine couldn't use CAP water directly instead of recharging it. I thought that it would be a good use for CAP water rather than groundwater. I asked the SWCA representative about this and he could not give me an answer. Dan Neff from M3 overheard my question. He said that he would get back to

me with an answer. A few minutes later he brought a Rosemont representative over to meet me, however he didn't know the answer to my question. A while later, Dan found Mr. Samorano, the mine manager, who told me that CAP water is too "hard" to be used in the flotation process and would have to be filtered. I suggested that it could be used for dust control and other uses on the site to minimize the use of ground water.

2. I had additional concerns about one of my original questions regarding the increased accident and death rate on SR83 shown in the Executive Summary. Besides the employee vehicle traffic it states there will be an estimated 582 round trip truck shipments per week (83 trucks per day, 3.5 per hour). I asked the rep about the road improvements. I was told nothing was certain yet because the final Traffic Impact Study (TIS) has not been completed. The ADOT District Engineer overheard the question and told me that the types of improvements would not be determined by ADOT until the actual TIS was submitted. These could include passing lanes, bus pull-outs, improvements to the road section, etc. The conclusion was that there is no way to comment on the traffic mitigation.

I then attended the presentation by Mr. Upchurch to hear about the DEIS and how issues were being mitigated. After listening to the presentation and the questions that he answered, I realized the DEIS is virtually impossible to comment on. Not only are there four alternatives, each with their own separate issues and impacts, of which many are still unresolved, along with the different mitigation necessary for each alternative. Mr. Upchurch kept mentioning that there are issues where "they are asking for new models", "new models are being submitted", "the mine is trying to meet", "still studying", and other similar statements. These descriptions of how the issues, impacts and mitigation were still being reviewed and modified concerned me. (I was at a subsequent Pima County Board of Supervisors meeting and heard Mr. Upchurch give almost the same presentation which confirmed what I heard at Palo Verde High School.)

Mr. Upchurch did not provide enough detail about one of my original questions regarding the mitigation of the waste rock and tailings, so I went back to the display area to see if I was missing something. I asked about the mitigation and was told that they are still working on the use of soil, growing media and the seed mix. They showed me the exhibit that showed what 20 years of the growth of the revegetation material on the slopes would look like. If I looked really close, some small green spots were visible, but for the most part the slope looked barren. I have since looked in the DEIS and I believe the exhibit I was shown at Palo Verde High School was Appendix D, Figure 2d.) Based on the review of all of Figure 2 exhibits my question was finally answered. Even after the proposed mitigation in the DEIS, the results of the mining will end up looking a lot like all of the rest of the mines in Arizona.

Still thinking about the CAP issue, I also went back to the table with the exhibits regarding the ground water impact. That's when I realized there was an issue which I haven't heard mentioned very much; the "pit lake". I noticed the pit lake on the section when I was looking to see how the

aquifer around the mine would be affected. I was surprised how deep the water in the lake will eventually be. I was told that the surrounding aquifer will drain into the pit, a sump, and while there is mining, the pit will be de-watered. After secession of operation, the lake would form. Several new questions came to mind.

1. I asked what will happen to the water that is pumped from the pit while it is de-watered. How much would there be and how would it be used? What is the water quality? The person at the table was not able to answer the questions.

2. I asked about the water quality in the 'pit lake" after it fills? I was told that the good news is that the existing rock will help to keep the lake less acidic than similar mine lakes. I was also told something about the water meeting "water quality standards", but "It probably wouldn't be a good idea to let the water touch your skin". This spawned another question.

3. According to the exhibit this will be a large and deep body of water. I asked what will be done to keep water fowl, especially migratory water fowl from using the "pit lake". I was told that this item is not addressed in the DEIS and would be addressed in the FEIS.

I have gone back to see if these issues are addressed in the DEIS. I did not find these issues addressed in the Executive Summary, so I searched all of the DEIS documents.

1. I did find the answer in Volume 1, Chapters 2, Water Supply, Page 29 and Chapter 3, Ground Water Quantity, Page 230 that the water pumped from the pit would be used for processing. The volume is 16-27,000 acre-feet.

2. I found the reference to the Predicted Geochemistry of the pit lake discussed in Volume 1, Chapter 3 on Pages 292-294. On Page 294, it states that Silver, Cadmium, Copper, Lead and Mercury "exceeds" the surface water standards under all four alternatives. The final paragraph says that the potential Impacts are analyzed in the "Biological Resources" section of this "FEIS". Is this a typo or is the FEIS where the issue will be addressed?

3. Neither Water Fowl nor Migratory Water Fowl are listed in Index or Glossary and there is no reference that I could find in the entire document. The DEIS says that the lake will ultimately have a surface area of 213 acres on Page 291. That is a surface area larger than Rainbow Lake and several other lakes in Arizona.

   One reason that waterfowl may not be listed can be found in the Draft Migratory Bird Analysis SWCA 2011d. The text on Page 19 states that "Because there is no significant standing water in the proposed project area, water birds were filtered out from further consideration". Species listed as waterfowl in Table 3 on the same page are shown as "N - Not analyzed in detail within the Migratory Bird Report" under the Evaluation Section. A note at the end of the table states "Species that are categorically excluded are waterfowl (i.e., no habitat), rare migrants... This may be a true statement for the existing condition, but will not be true after mining is concluded.

I think the issues, impact and mitigation related to the "pit lake" need to be more thoroughly discussed. I am concerned that they won't be addressed until the Final EIS.

As I stated at the beginning of this letter, I like to make informed decisions and I am having a hard time doing that. After all of the time I have spent learning about this project my conclusion is that there are still no specific answers to my original questions.

Furthermore, I believe that the Draft EIS is being rushed and is not complete enough to give cogent comments. I also believe that all of the impacts and specific mitigation measures for those impacts need to be provided in a Revised DEIS so that the public has a chance to see and comment on could eventually be developed on the site and what the impacts of that development will be. I make these statements for the following reasons:

1. There are many unresolved issues in the DEIS. Based on statements by Mr. Upchurch at the two meetings I attended, there are many issues that have not been resolved or being revised during the public process (such as air quality) which means there is no way for the public to comment on the results of the on-going revisions to the impacts and/or the revisions to the proposed mitigation to the impacts.

3. There is no other chance for further public input on the process. Based on the EIS process shown on the card passed out at the meeting, there is no public comment period for the Final EIS.

4. Accessibility to information. The DEIS Figures section is not formatted for review by the average citizen; therefore it is impossible to have a full understanding of the document. There should be PDF versions of these figures. Even after using hardware and software that is fairly new, I am not able to view the Exhibits section. It takes over an hour to just to un-zip the file and then the exhibits cannot be opened without a current program.

5. Inadequate information. Other than water quality associated with the aquifer and the impact to the Special Species, the remaining issues, impacts and mitigation related to the "pit lake" are not addressed. What are all of the biological impacts? What are the long term impacts? What are the mitigation methods? How will the public be affected?

7. Lack of information at public meetings. The consultant for the Forest Service was not provided enough information to answer questions from the public about the project.

Thank you for your consideration of these issues,

Chuck Martin
841 N. Pantano Road
Tucson, AZ 8571

ATTACHMENT #5

Public Concern Statement	Response
The Coronado National Forest should not allow the Rosemont Copper Company project to move forward because of impacts to migratory birds. The Coronado National Forest should further analyze the project's potential impacts to all avian species in the project area, including migratory birds and raptors, and address the 2001 memorandum of understanding between the United States Fish and Wildlife Service and the Coronado National Forest.	Impacts to the Santa Rita Important Bird Area, migratory birds, and the habitat of bird species of concern within the analysis area, have been revised and are addressed and disclosed in the Biological Resources section of the FEIS.
The Coronado National Forest should reanalyze the presence of sensitive or special status plant and animal species in the project area.	The species identified in the comments linked to this Concern Statement have been reviewed to determine whether they should be included in analysis, or whether current analysis should be revised. The result is an updated description of effects to sensitive species in the FEIS. Please refer to the Biological Resources section of Chapter 3 in the FEIS for detailed information.
The Coronado National Forest should analyze wildlife mortality from increased traffic volume, and evaluate the effectiveness of measures to mitigate impacts such as road crossings, bridges, etc. The Coronado National forest should not allow the Rosemount Copper project to move forward, because of increased wildlife mortality due to increased roads and volume of traffic.	The impact of noise, lighting, and increased traffic to wildlife and public safety has been addressed in the FEIS. Please refer to the Biological Resources and Public Health and Safety sections of the FEIS for further information. Both the DEIS and FEIS have analyzed the impacts to wildlife and wildlife corridors from increased traffic associated with the proposed mine, including an analysis of potential impacts to habitat connectivity and increased direct mortality from road kills. Please refer to the Biological Resources section in Chapter 3 of the FEIS for further detail
The Coronado National Forest should further analyze impacts to wildlife linkages and corridors, and resulting decrease in gene flow and biodiversity, from the proposed project.	The analysis of animal movement corridors in the FEIS, and potential associated impacts on gene flow and biodiversity, has been updated in response to public and agency comments. Please see the Biological Resources section in Chapter 3 of the FEIS for further detail.
The Coronado National Forest should allow the Rosemont Copper Company project to move forward, because impacts to general wildlife populations, movement, and habitat will be minimized	While the Rosemont Copper Project contains a number of mitigation measures and monitoring procedures related to wildlife, implementation of this project will impact a number of wildlife species. These impacts are described in detail in the FEIS and supporting biological resource reports.
The Coronado National Forest should not allow the Rosemont Copper Company project to move forward because of loss of biodiversity and impacts to habitat for a wide variety of plant and animal species.	Biodiversity includes all organisms, species, and populations; the genetic variation among these; and all their complex assemblages of communities and ecosystems. The Rosemont Copper FEIS addresses the most critical components of biodiversity through the analysis and disclosure of impacts to terrestrial and aquatic plants and animals, and mitigative effectiveness, that occur in and surrounding the project area. Particular emphasis is placed on those species whose population viability is a concern. Please refer to Chapter 3 of the FEIS for further information. As noted in Chapter 1 of both the DEIS and FEIS, under mining laws the Forest Service may reasonably regulate mining activities to protect surface resources, however there are statutory and constitutional limits to its discretion. The Forest Service may reject an unreasonable Mine Plan of Operation but cannot categorically prohibit mining or deny reasonable and legal mineral operations under the mining laws.

ATTACHMENT #6

Malachite—A monoclinic mineral, $Cu_2CO_3(OH)_2$, bright green, occurs with azurite in oxidized zones of copper.

Management Indicator Species—A wildlife species whose presence in a certain location or situation at a given population level indicates a particular environmental condition. Population changes are believed to indicate effects of management activities on a number of other wildlife species.

Megafauna—Large land animals.

Mesozoic—The era of geologic time spanning 251 million to 65.5 million years before present (Walker et al. 2012).

Metamorphic—An adjective describing or pertaining to any solid rock that has been subjected to mineralogical and structural modification by physical and chemical conditions (different from the conditions of origin) below the surface zones of weathering and cementation (Gary et al. 1974:446).

Micritic—Limestone consisting dominantly of a micrite matrix.

Migratory Birds—Species that migrate north each spring to breeding grounds in the United States and Canada, then fly south to spend the bulk of the year in Central or South America. Many common songbirds are neotropical birds.

Mine Plan of Operations—A description of proposed mineral exploration or mining, including name and address of the operator, location of the operation, access to the operation, the period in which the operation would take place, and other information as required by the U.S. Forest Service in accordance with agency regulations at 36 Code of Federal Regulations 228.4.

Mineral Entry—Authority to enter public lands for the purpose of developing minerals in an orderly, organized manner.

Mineral Reserves—Known mineral deposits that are recoverable under present conditions but are as yet undeveloped.

Mineral Rights—An ownership interest in minerals that may or may not be owned by the person or party having title to the surface estate.

Mineral Survey—A cadastral survey of a lode claim, placer claim, or millsite with all its notes and plats. This type of survey is executed by a U.S. mineral surveyor for the purpose of marking the legal boundaries of mining claims on the public domain prior to conveyance of by patent. The location and estimated value of mining improvements are returned by the survey but no reference is made to mineral deposits (Glossaries of Bureau of Land Management Surveying and Mapping Terms).

Mineral Survey Fractions—Small parcels of National Forest System lands interspersed with or adjacent to lands transferred out of Federal ownership under the mining laws (36 Code of Federal Regulations 254.31, Definitions).

Mineral Withdrawal—An action that withdraws Federal public domain land from any mining and mineral development activity or staking of a mining claim within the boundaries of the designated area, excluding areas with valid prior existing rights.

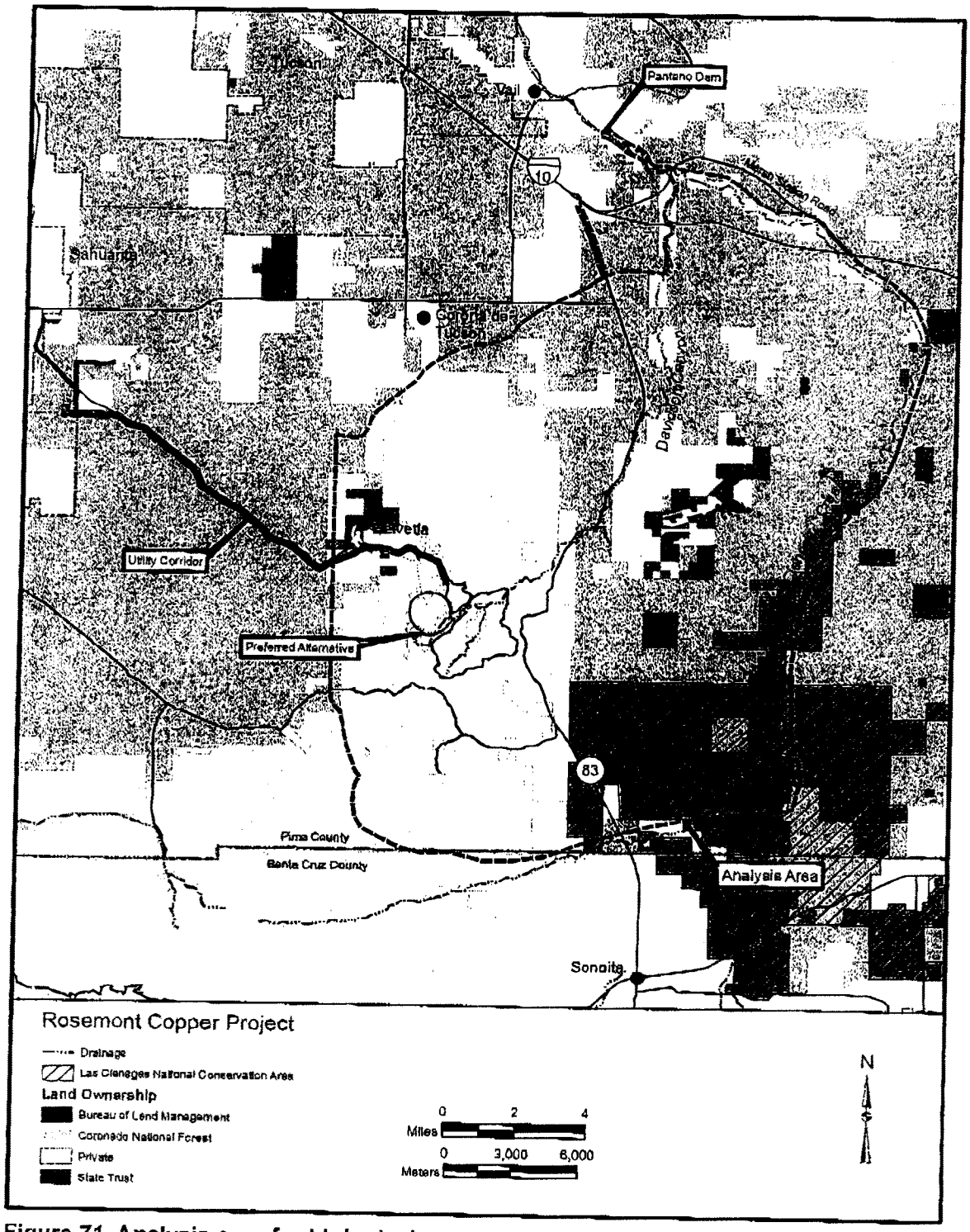

Figure 71. Analysis area for biological resources

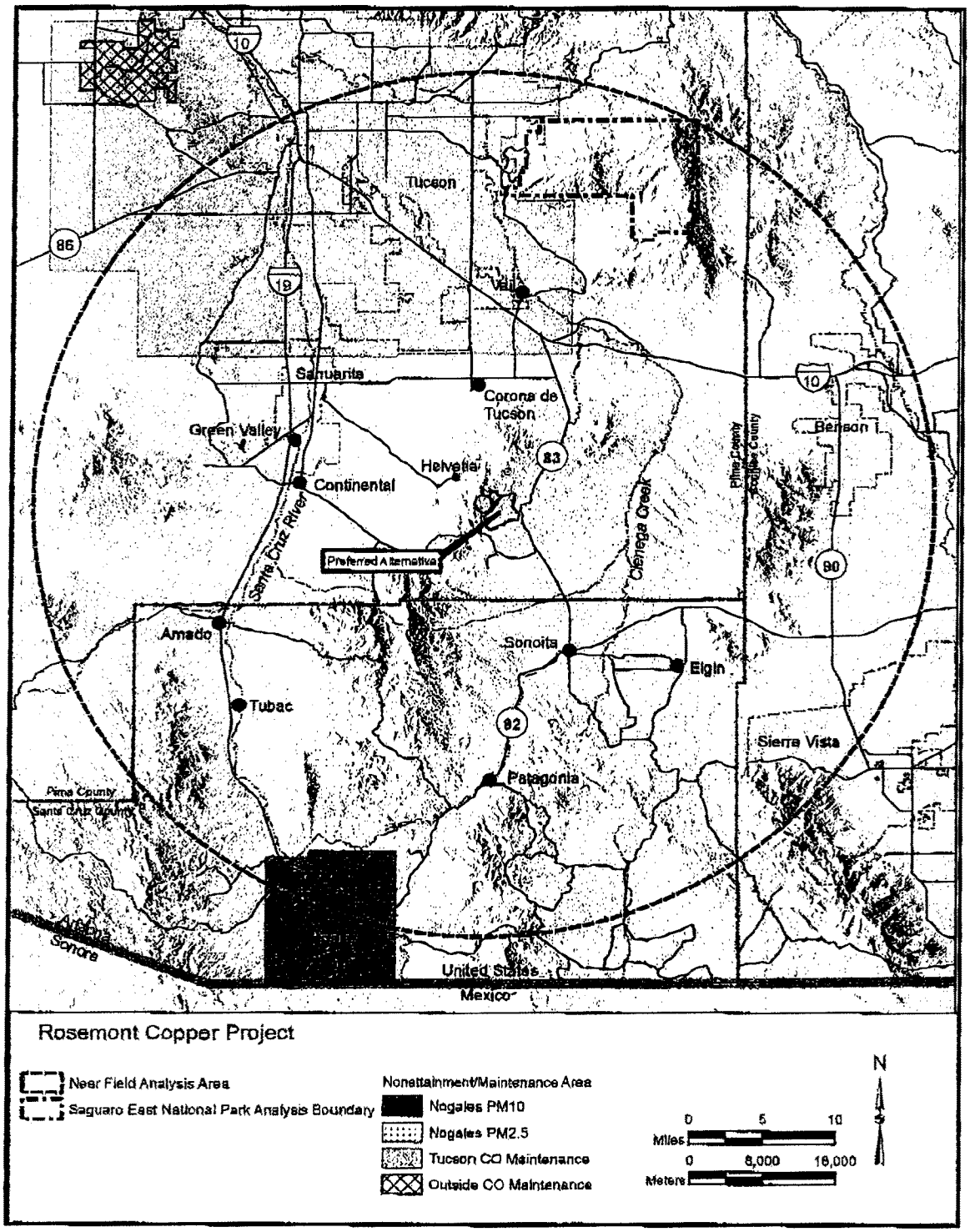

Figure 38. Analysis area and nonattainment and maintenance areas for air

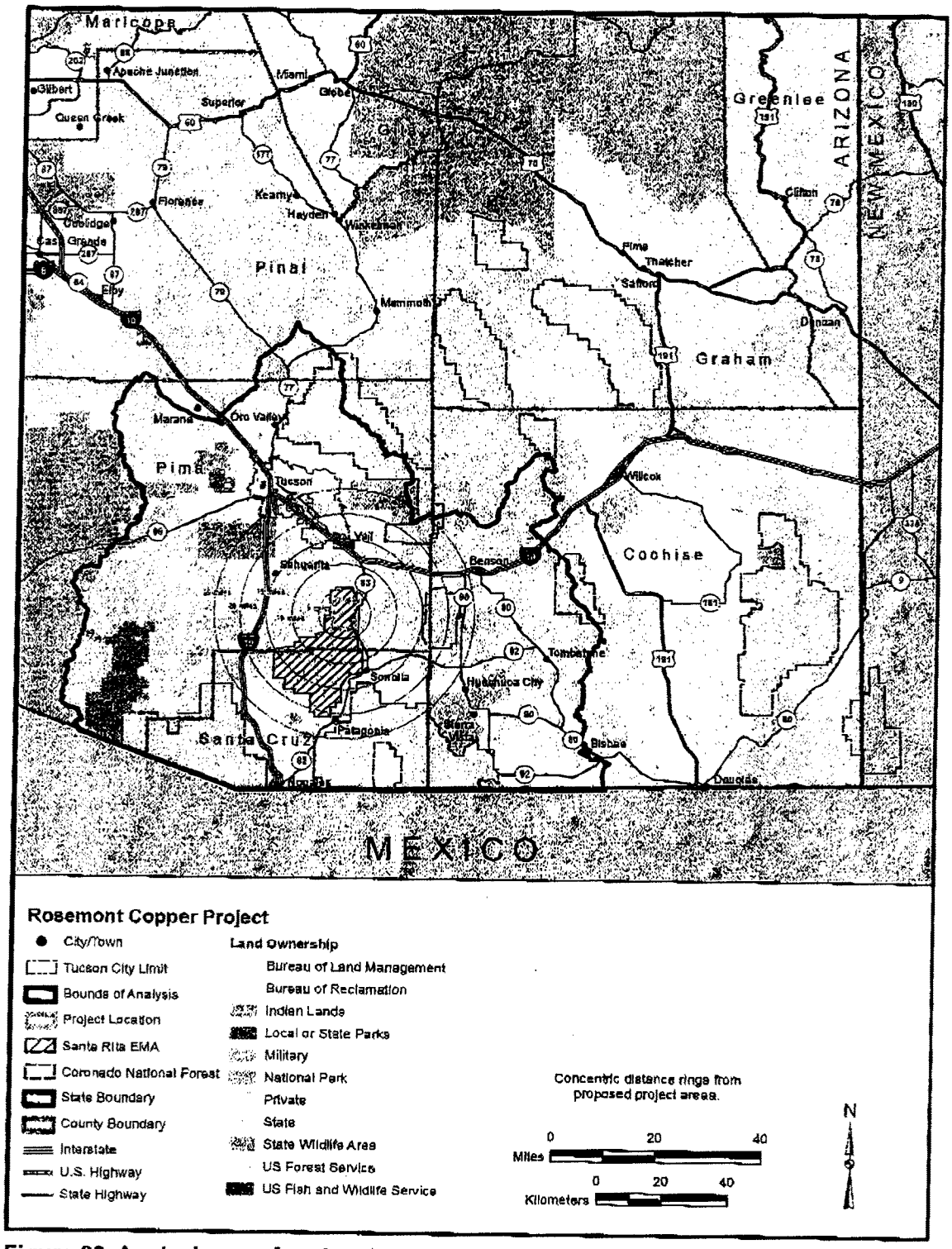

Figure 80. Analysis area for visual resources

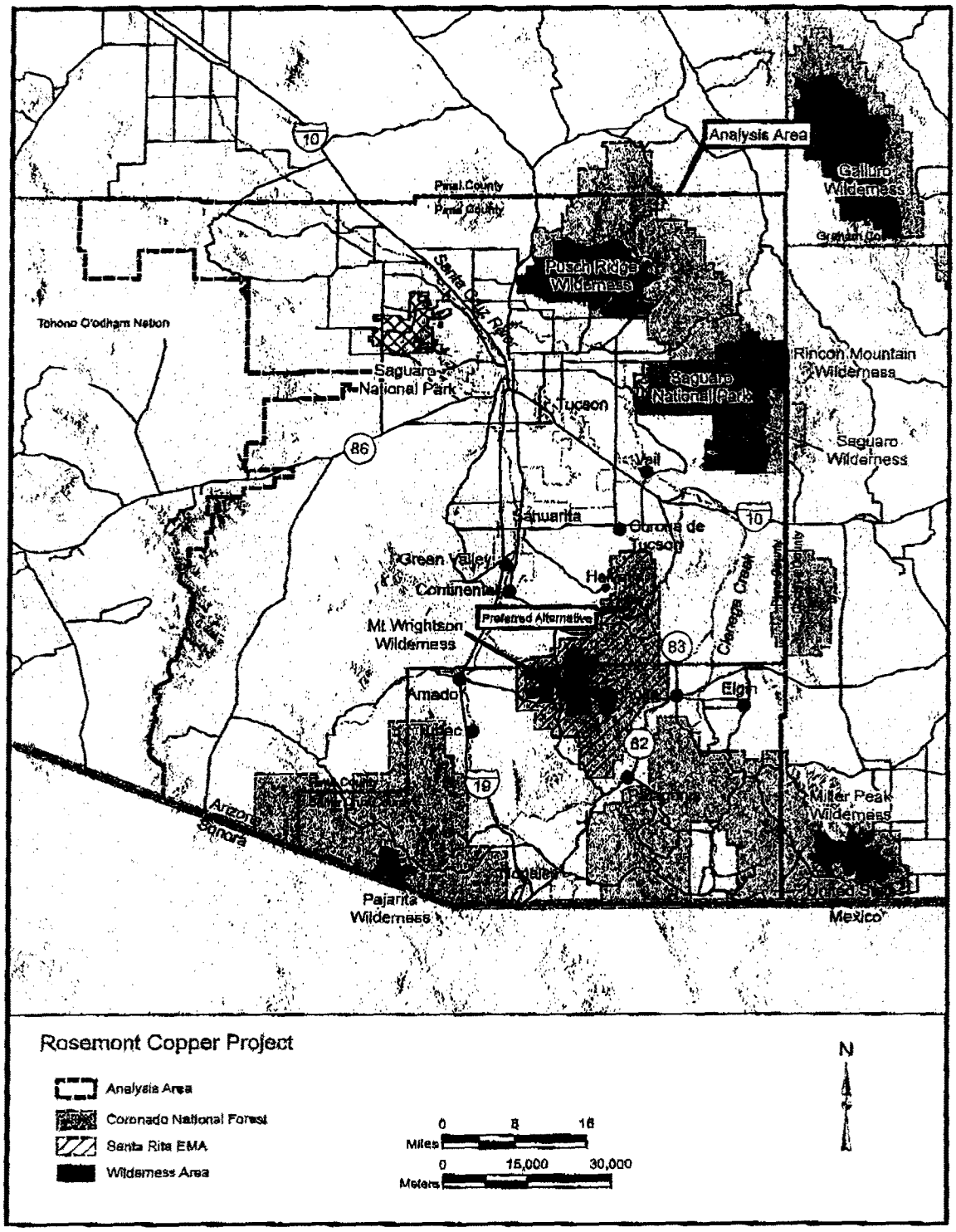

Figure 89. Analysis area for recreation and wilderness resources

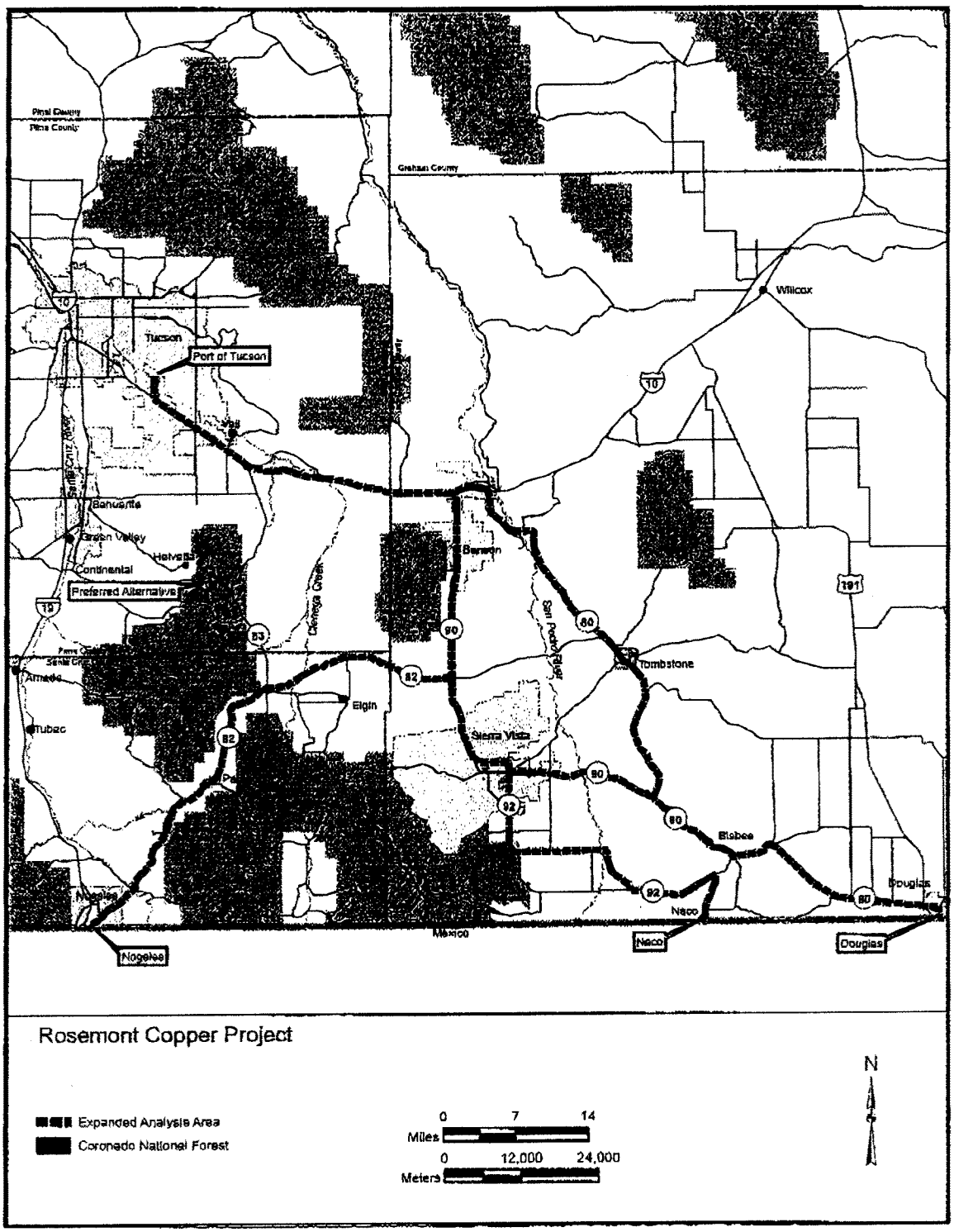

Figure 102. Transportation/access expanded analysis area

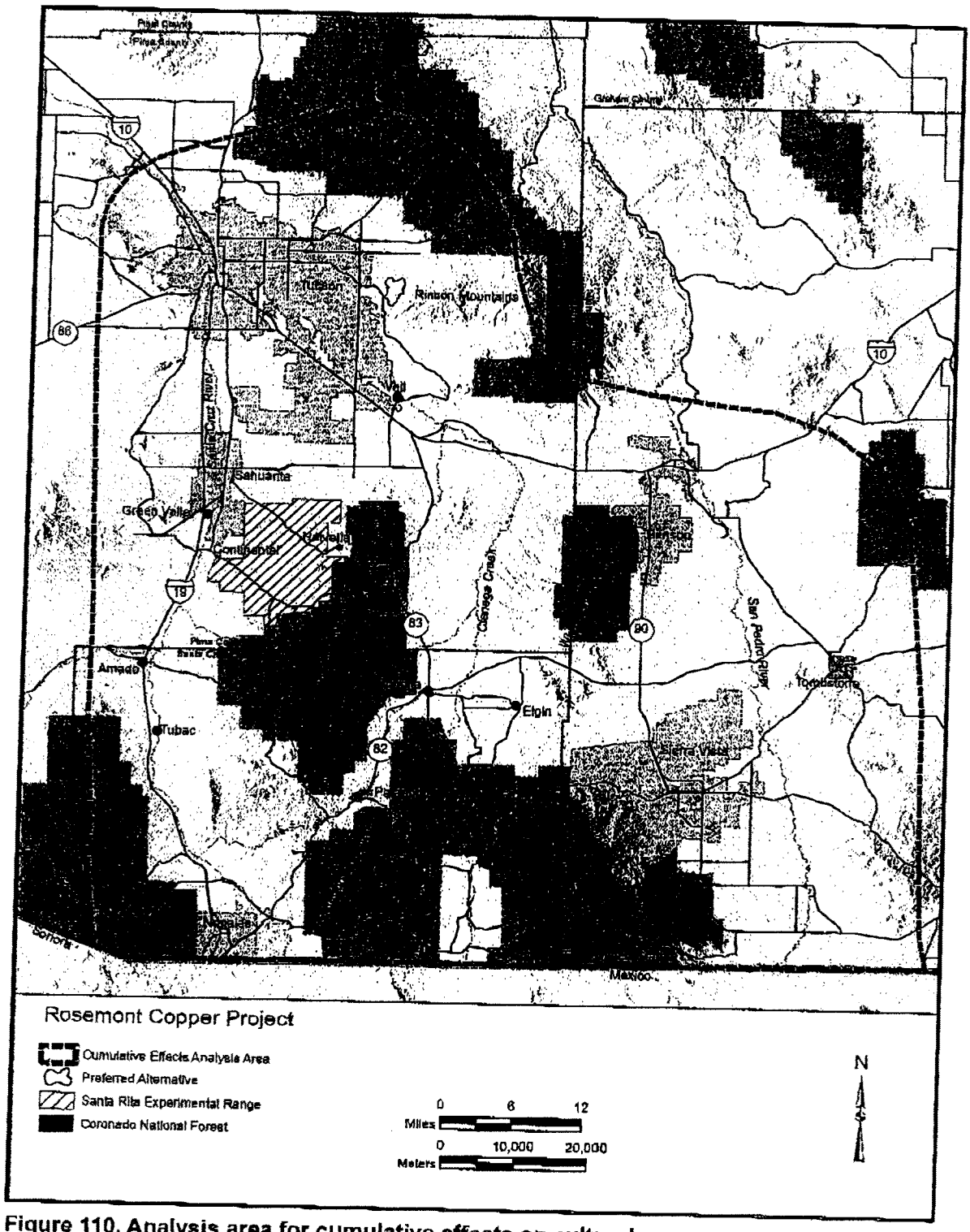

Figure 110. Analysis area for cumulative effects on cultural resources

ATTACHMENT #3

All 162 species listed by the Coronado as Sensitive are evaluated in this report (Forest Service 2007a, 2007b). It was determined that 71 of these species would be evaluated further. Two of these species (Sonoran desert tortoise (*Gopherus morafkai*) and yellow-billed cuckoo (*Coccyzus americanus*)) are candidates for listing as endangered or threatened. For a more detailed evaluation of these 71 Forest Service Sensitive species, please reference the biological evaluation for the Rosemont Copper Project (SWCA Environmental Consultants (SWCA) 2013a). All 33 species that are listed as Sensitive by the BLM Tucson Office and that have verified or probable/possible occurrences in the analysis area are evaluated in this report (BLM 2005). Two of these species (Sonoran desert tortoise and yellow-billed cuckoo) are candidates for listing as endangered or threatened. It was determined that 21 of these species would be evaluated further. For a more detailed evaluation of BLM Sensitive species, please reference the biological evaluation (SWCA 2013a).

There are 33 MIS and one group of cavity-nesting birds on the Coronado National Forest (Forest Service 2011). Thirteen MIS and one group were selected for analysis at the project level based on their known occurrence within or near the project area or the presence of suitable habitat (SWCA 2013b): American peregrine falcon (*Falco peregrinus anatum*), Arizona ridge-nosed rattlesnake (*Crotalus willardi willardi*), Baird's sparrow (*Ammodramus bairdii*), Bell's vireo (*Vireo bellii*), black bear (*Ursus americanus*), Gould's turkey (*Meleagris gallopavo mexicana*), Montezuma (Mearn's) quail (*Cyrtonyx montezumae*), northern beardless-tyrannulet (*Camptostoma imberbe*), northern gray hawk (*Buteo nitidus*),western barking frog (*Craugastor augusti cactorum*), and white-tailed deer (*Odocoileus virginianus*), as well as primary and secondary cavity nesters. Two MIS, Gila chub and Gila topminnow, have been evaluated in greater detail in the biological assessment (Forest Service and SWCA 2013; SWCA 2012a, 2012b) and are therefore not included for analysis in the MIS report. The remaining 19 species were eliminated from consideration in this analysis because their known distributions are well outside the project area and/or the project area does not contain suitable habitats for those species.

All 106 migratory bird species listed by the National PIF (2006) and/or the USFWS (1995) were evaluated in this report. It was determined that 70 of these species would need to be evaluated further. For a more detailed evaluation of migratory bird species, please reference the migratory bird analysis (SWCA 2013c). All 531 Species of Greatest Conservation Need in Arizona (AGFD 2012e) (see table 6) and all 13 Species of Economic and Recreational Importance in Arizona (AGFD 2012e) (see table 7) were evaluated in this report. All 44 Pima County's Multi-species Conservation Plan Covered Species (Pima County 2012b) were evaluated in this report (see table 8). In all, approximately 700 species were evaluated in this report, and it was determined that 153 species and the 1 MIS group need to be evaluated in greater detail (see table 9).[1]

[1] This includes ESA-listed, Forest Service and BLM sensitive species, and MIS. Golden eagles, migratory birds, AGFD Species of Greatest Conservation Need or Species of Economic and Recreational Importance, and Pima County Covered Species are not evaluated in greater detail, hence are not carried forward into other resource reports, unless they are also on other lists.

Bird Observations

Date Range: Change Date
1/1 - 12/31, 1900-2013 **Combine Years**

For Change Location
[Santa Rita Mountains, Coronado National Forest]

Last updated ~20 hrs ago.

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mallard	MAP												
Ring-necked Duck	MAP												
Scaled Quail	MAP												
Gambel's Quail	MAP												
Montezuma Quail	MAP												
Wild Turkey	MAP												
Pied-billed Grebe	MAP												
American White Pelican	MAP												
Great Blue Heron	MAP												
Snowy Egret	MAP												
Green Heron	MAP												
White-faced Ibis	MAP												
Black Vulture	MAP												
Turkey Vulture	MAP												
Osprey	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-tailed Kite	MAP												
Golden Eagle	MAP												
Northern Harrier	MAP												
Sharp-shinned Hawk	MAP												
Cooper's Hawk	MAP												
Sharp-shinned/Cooper's Hawk	MAP												
Northern Goshawk	MAP												
Accipiter sp.	MAP												
Common Black-Hawk	MAP												
Harris's Hawk	MAP												
Red-shouldered Hawk	MAP												
Broad-winged Hawk	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gray Hawk	MAP												
Short-tailed Hawk	MAP												
Swainson's Hawk	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zone-tailed Hawk	MAP												
Red-tailed Hawk	MAP												
Ferruginous Hawk	MAP												
Buteo sp.	MAP												
hawk sp.	MAP												
Virginia Rail	MAP												
American Coot	MAP												
Killdeer	MAP												
Western Sandpiper	MAP												
Wilson's Snipe	MAP												
Rock Pigeon	MAP												
Band-tailed Pigeon	MAP												
Eurasian Collared-Dove	MAP												
White-winged Dove	MAP												
Mourning Dove	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Inca Dove	MAP												
Common Ground-Dove	MAP												
Yellow-billed Cuckoo	MAP												
Greater Roadrunner	MAP												
Barn Owl	MAP												
Flammulated Owl	MAP												
Western Screech-Owl	MAP												
Whiskered Screech-Owl	MAP												
Great Horned Owl	MAP												
Northern Pygmy-Owl	MAP												
Elf Owl	MAP												
Burrowing Owl	MAP												
Spotted Owl	MAP												
Long-eared Owl	MAP												
Lesser Nighthawk	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Nighthawk	MAP												
nighthawk sp.	MAP												
Common Poorwill	MAP												
Buff-collared Nightjar	MAP												
Mexican Whip-poor-will	MAP												
Vaux's Swift	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-throated Swift	MAP												
Magnificent Hummingbird	MAP												
Plain-capped Starthroat	MAP												
Blue-throated Hummingbird	MAP												
Lucifer Hummingbird	MAP												
Black-chinned Hummingbird	MAP												
Anna's Hummingbird	MAP												
Costa's Hummingbird	MAP												
Broad-tailed Hummingbird	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rufous Hummingbird	MAP												
Allen's Hummingbird	MAP												
Rufous/Allen's Hummingbird	MAP												
Calliope Hummingbird	MAP												
Selasphorus sp.	MAP												
Broad-billed Hummingbird	MAP												
Berylline Hummingbird	MAP												
Violet-crowned Hummingbird	MAP												
White-eared Hummingbird	MAP												
hummingbird sp.	MAP												
Eared Quetzal	MAP												
Elegant Trogon	MAP												
Belted Kingfisher	MAP												
Lewis's Woodpecker	MAP												
Acorn Woodpecker	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gila Woodpecker	MAP												
Williamson's Sapsucker	MAP												
Yellow-bellied Sapsucker	MAP												
Red-naped Sapsucker	MAP												
Yellow-bellied/Red-naped Sapsucker	MAP												
Red-breasted Sapsucker	MAP												
Red-naped x Red-breasted Sapsucker (hybrid)	MAP												
sapsucker sp.	MAP												
Ladder-backed Woodpecker	MAP												
Hairy Woodpecker	MAP												
Arizona Woodpecker	MAP												
Picoides sp.	MAP												
Northern Flicker	MAP												
Gilded Flicker	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northern/Gilded Flicker	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
woodpecker sp.	MAP												
Crested Caracara	MAP												
American Kestrel	MAP												
Merlin	MAP												
Peregrine Falcon	MAP												
Prairie Falcon	MAP												
large falcon sp.	MAP												
small falcon sp.	MAP												
diurnal raptor sp.	MAP												
Northern Beardless-Tyrannulet	MAP												
Olive-sided Flycatcher	MAP												
Greater Pewee	MAP												
Western Wood-Pewee	MAP												
Eastern Wood-Pewee	MAP												
Western/Eastern Wood-Pewee	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Willow Flycatcher	MAP												
Least Flycatcher	MAP												
Hammond's Flycatcher	MAP												
Gray Flycatcher	MAP												
Dusky Flycatcher	MAP												
Gray/Dusky Flycatcher	MAP												
Hammond's/Dusky Flycatcher	MAP												
Pacific-slope Flycatcher	MAP												
Cordilleran Flycatcher	MAP												
Pacific-slope/Cordilleran Flycatcher (Western Flycatcher)	MAP												
Buff-breasted Flycatcher	MAP												
Empidonax sp.	MAP												
Black Phoebe	MAP												
Eastern Phoebe	MAP												
Say's Phoebe	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Vermilion Flycatcher	MAP												
Dusky-capped Flycatcher	MAP												
Ash-throated Flycatcher	MAP												
Brown-crested Flycatcher	MAP												
Myiarchus sp.	MAP												
Sulphur-bellied Flycatcher	MAP												
Cassin's Kingbird	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Thick-billed Kingbird	MAP												
Western Kingbird	MAP												
Cassin's/Western Kingbird	MAP												
yellow-bellied kingbird sp.	MAP												
Rose-throated Becard	MAP												
Loggerhead Shrike	MAP												
White-eyed Vireo	MAP												
Bell's Vireo	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gray Vireo	MAP												
Plumbeous Vireo	MAP												
Cassin's Vireo	MAP												
Plumbeous/Cassin's Vireo	MAP												
solitary vireo sp.	MAP												
Hutton's Vireo	MAP												
Warbling Vireo	MAP												
Red-eyed Vireo	MAP												
Yellow-green Vireo	MAP												
vireo sp.	MAP												
Steller's Jay	MAP												
Western Scrub-Jay	MAP												
Mexican Jay	MAP												
Aphelocoma sp.	MAP												
Chihuahuan Raven	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Raven	MAP												
raven sp.	MAP												
Horned Lark	MAP												
Northern Rough-winged Swallow	MAP												
Purple Martin	MAP												
Tree Swallow	MAP												
Violet-green Swallow	MAP												
Bank Swallow	MAP												
Barn Swallow	MAP												
Cliff Swallow	MAP												
swallow sp.	MAP												
Mountain Chickadee	MAP												
Bridled Titmouse	MAP												
Juniper Titmouse	MAP												
Verdin	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bushtit	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red-breasted Nuthatch	MAP												
White-breasted Nuthatch	MAP												
Pygmy Nuthatch	MAP												
Brown Creeper	MAP												
Rock Wren	MAP												
Canyon Wren	MAP												
House Wren	MAP												
Pacific Wren	MAP												
Winter Wren	MAP												
Pacific/Winter Wren	MAP												
Bewick's Wren	MAP												
Cactus Wren	MAP												
Blue-gray Gnatcatcher	MAP												
Black-tailed Gnatcatcher	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Black-capped Gnatcatcher	MAP												
Black-tailed x Black-capped Gnatcatcher (hybrid)	MAP												
gnatcatcher sp.	MAP												
American Dipper	MAP												
Golden-crowned Kinglet	MAP												
Ruby-crowned Kinglet	MAP												
Eastern Bluebird	MAP												
Western Bluebird	MAP												
Mountain Bluebird	MAP												
bluebird sp.	MAP												
Townsend's Solitaire	MAP												
Brown-backed Solitaire	MAP												
Swainson's Thrush	MAP												
Hermit Thrush	MAP												
Catharus sp.	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wood Thrush	MAP												
Rufous-backed Robin	MAP												
American Robin	MAP												
Varied Thrush	MAP												
Aztec Thrush	MAP												
Gray Catbird	MAP												
Northern Mockingbird	MAP												
Sage Thrasher	MAP												
Brown Thrasher	MAP												
	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Curve-billed Thrasher													
Crissal Thrasher	MAP												
European Starling	MAP												
Cedar Waxwing	MAP												
Phainopepla	MAP												
Olive Warbler	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chestnut-collared Longspur	MAP												
Ovenbird	MAP												
Worm-eating Warbler	MAP												
Louisiana Waterthrush	MAP												
Northern Waterthrush	MAP												
Golden-winged Warbler	MAP												
Black-and-white Warbler	MAP												
Crescent-chested Warbler	MAP												
Orange-crowned Warbler	MAP												
Lucy's Warbler	MAP												
Nashville Warbler	MAP												
Virginia's Warbler	MAP												
MacGillivray's Warbler	MAP												
Kentucky Warbler	MAP												
Common Yellowthroat	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hooded Warbler	MAP												
American Redstart	MAP												
Northern Parula	MAP												
Tropical Parula	MAP												
Yellow Warbler	MAP												
Yellow-rumped Warbler	MAP												
Yellow-throated Warbler	MAP												
Grace's Warbler	MAP												
Black-throated Gray Warbler	MAP												
Townsend's Warbler	MAP												
Hermit Warbler	MAP												
Townsend's x Hermit Warbler (hybrid)	MAP												
Fan-tailed Warbler	MAP												
Rufous-capped Warbler	MAP												
Wilson's Warbler	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red-faced Warbler	MAP												
Painted Redstart	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Slate-throated Redstart	MAP												
Yellow-breasted Chat	MAP												
warbler sp.	MAP												
Green-tailed Towhee	MAP												
Spotted Towhee	MAP												
Rufous-crowned Sparrow	MAP												
Canyon Towhee	MAP												
Abert's Towhee	MAP												
Rufous-winged Sparrow	MAP												
Botteri's Sparrow	MAP												
Cassin's Sparrow	MAP												
Chipping Sparrow	MAP												
Clay-colored Sparrow	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Brewer's Sparrow	MAP												
Black-chinned Sparrow	MAP												
Vesper Sparrow	MAP												
Lark Sparrow	MAP												
Five-striped Sparrow	MAP												
Black-throated Sparrow	MAP												
Sage Sparrow	MAP												
Lark Bunting	MAP												
Savannah Sparrow	MAP												
Grasshopper Sparrow	MAP												
Baird's Sparrow	MAP												
Fox Sparrow	MAP												
Song Sparrow	MAP												
Lincoln's Sparrow	MAP												
White-throated Sparrow	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-crowned Sparrow	MAP												
Golden-crowned Sparrow	MAP												
Dark-eyed Junco	MAP												
Yellow-eyed Junco	MAP												
Dark-eyed/Yellow-eyed Junco	MAP												
sparrow sp.	MAP												
Hepatic Tanager	MAP												
Summer Tanager	MAP												
Scarlet Tanager	MAP												
Western Tanager	MAP												
Flame-colored Tanager	MAP												
	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Western x Flame-colored Tanager (hybrid)													
Piranga sp.	MAP												
Northern Cardinal	MAP												
Pyrrhuloxia	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northern Cardinal/Pyrrhuloxia	MAP												
Rose-breasted Grosbeak	MAP												
Black-headed Grosbeak	MAP												
Rose-breasted/Black-headed Grosbeak	MAP												
Blue Grosbeak	MAP												
Lazuli Bunting	MAP												
Indigo Bunting	MAP												
Varied Bunting	MAP												
Painted Bunting	MAP												
bunting sp.	MAP												
Dickcissel	MAP												
Red-winged Blackbird	MAP												
Eastern Meadowlark	MAP												
Western Meadowlark	MAP												
Eastern/Western Meadowlark	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Yellow-headed Blackbird	MAP												
Brewer's Blackbird	MAP												
Great-tailed Grackle	MAP												
Bronzed Cowbird	MAP												
Brown-headed Cowbird	MAP												
Bronzed/Brown-headed Cowbird	MAP												
Hooded Oriole	MAP												
Bullock's Oriole	MAP												
Scott's Oriole	MAP												
oriole sp.	MAP												
blackbird sp.	MAP												
Purple Finch	MAP												
Cassin's Finch	MAP												
House Finch	MAP												
Carpodacus sp.	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red Crossbill	MAP												
Pine Siskin	MAP												
Lesser Goldfinch	MAP												
Lawrence's Goldfinch	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
American Goldfinch	MAP												
Evening Grosbeak	MAP												
House Sparrow	MAP												
passerine sp.	MAP												

KEY: | = insufficient data | = rare to widespread

Download Histogram Data

© Audubon and Cornell Lab of Ornithology | Affiliates and Sponsors | Privacy Policy | Contact | FAQ | Glossary

indicates that during initial filling of the pit lake, the lake elevation would rise quickly but the increase in area is more subtle (as a result of the steep pit shell). As lake elevations continue to rise the area begins to increase more substantially, which would result in higher lake evaporation. The entire input is shown in Illustration 5.02, when in practice the average predicted lake stage is 4287 feet amsl (Section 5.3.1) and values above about 4500 feet amsl are not used by the model.

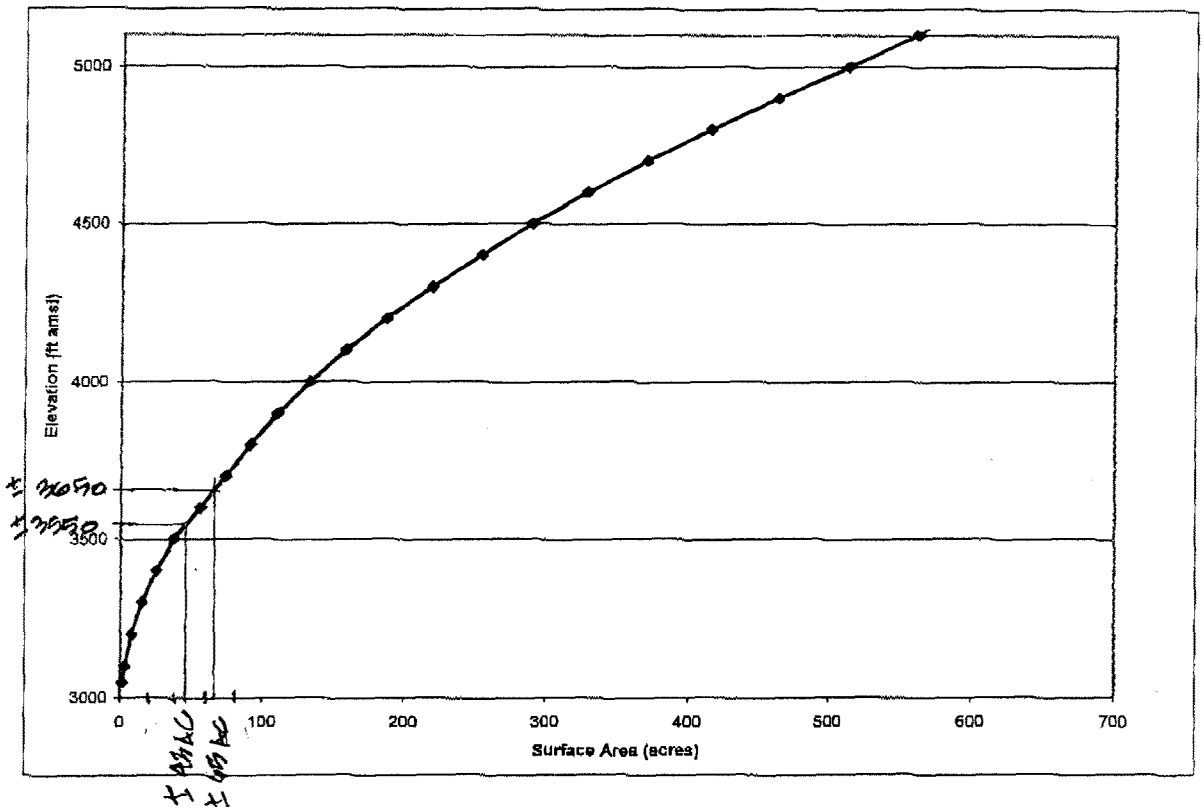

Illustration 5.02 Change in Lake Surface Area with Lake Stage Elevation

5.2.3 Meteorology

An analysis of available meteorological data was completed as part of an effort to ensure consistency in the data being used for other design efforts at the Rosemont site. The results of this analysis are summarized in Appendix A and discussed in Section 3.0, and presented fully in a separate technical memorandum (Tetra Tech, 2009). This 2009 technical memorandum summarizes the methodology used to develop the synthetic precipitation dataset for the Rosemont site. The two (2) meteorological inputs into the DSM are precipitation and evaporation.

5.2.3.1 Precipitation

The precipitation rate is determined from the input data and a stochastic element with a uniform probability distribution function (i.e., PDF) which varies precipitation between 80% and 120% of the input value to account for uncertainties associated with knowing the precise precipitation

The rate of pit filling is initially controlled by the groundwater inflow rate and later by evaporation and direct precipitation as the surface area of the pit lake increases. Based on the simulated hydrology, the pit lake will fill to 90% of the final lake elevation in 215 years. The steady-state lake elevation is estimated to be achieved in approximately 1,000 years. Illustration 5.03 illustrates the predicted pit lake development through time. The mean estimates for lake area and lake volume are 218 acres and 101,700 acre-feet, respectively. There are small differences in the area and volume calculated between the regional groundwater flow model and the DSM as a result of varying degrees of vertical discretization in the models. These differences are less than 6%.

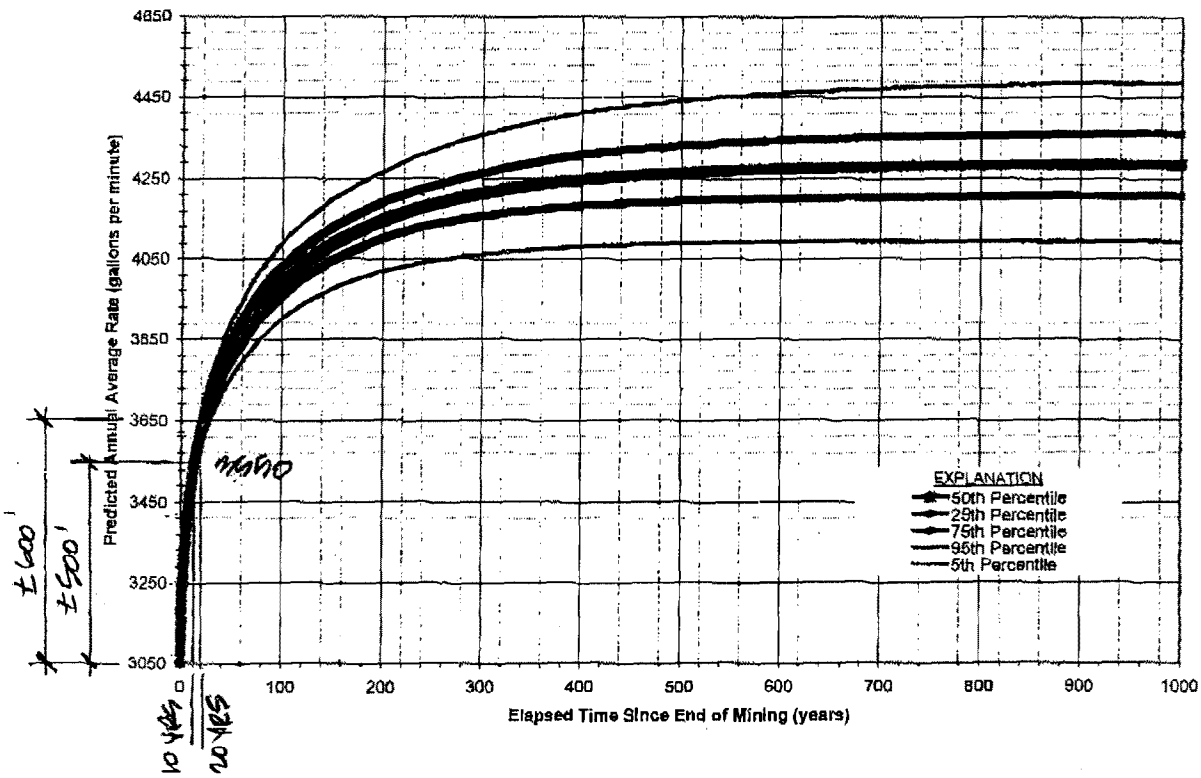

Illustration 5.03 Simulated Pit Lake Elevation for the 1,000-year Period of Simulation

RON BARBER
2ND DISTRICT, ARIZONA

COMMITTEES:
HOUSE ARMED SERVICES
TACTICAL AIR AND LAND FORCES
READINESS

HOMELAND SECURITY
OVERSIGHT AND MANAGEMENT
EFFICIENCY, RANKING MEMBER

SMALL BUSINESS
ECONOMIC GROWTH, TAX AND
CAPITAL ACCESS
AGRICULTURE, ENERGY AND TRADE

Congress of the United States
House of Representatives
Washington, DC 20515–0302

WEBSITE:
www.barber.house.gov

1029 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE (202) 225–2542
FAX (202) 225–0378

TUCSON OFFICE:
3945 E. FORT LOWELL, SUITE 211
TUCSON, AZ 85712
PHONE (520) 881–3588
FAX (520) 322–9490

SIERRA VISTA OFFICE:
77 CALLE PORTAL, SUITE B-160
SIERRA VISTA, AZ 85635
PHONE (520) 459–3115
FAX (520) 459–5419

FACEBOOK:
facebook.com/RepRonBarber

TWITTER:
twitter.com/RepRonBarber

FACSIMILE TRANSMISSION

To:	Ms. Laura Vaught, Associate Administrator for Congressional Affairs		
Fax:	(202) 501-1519		
From:	Sean Goslar	**Date:**	February 12, 2014
Notes:	Re: Mr. Chuck Martin	**Pages to follow:**	19

Part Two

Congressional Request

Thank you.

Please contact me if you have any questions.

If you experience difficulties with this transmission or you are not the intended recipient please immediately disregard this transmission and Contact:

CALL: (520) 881-3588 or
FAX: (520) 322-9490

Malachite—A monoclinic mineral, $Cu_2CO_3(OH)_2$, bright green, occurs with azurite in oxidized zones of copper.

Management Indicator Species—A wildlife species whose presence in a certain location or situation at a given population level indicates a particular environmental condition. Population changes are believed to indicate effects of management activities on a number of other wildlife species.

Megafauna—Large land animals.

Mesozoic—The era of geologic time spanning 251 million to 65.5 million years before present (Walker et al. 2012).

Metamorphic—An adjective describing or pertaining to any solid rock that has been subjected to mineralogical and structural modification by physical and chemical conditions (different from the conditions of origin) below the surface zones of weathering and cementation (Gary et al. 1974:446).

Micritic—Limestone consisting dominantly of a micrite matrix.

Migratory Birds—Species that migrate north each spring to breeding grounds in the United States and Canada, then fly south to spend the bulk of the year in Central or South America. Many common songbirds are neotropical birds.

Mine Plan of Operations—A description of proposed mineral exploration or mining, including name and address of the operator, location of the operation, access to the operation, the period in which the operation would take place, and other information as required by the U.S. Forest Service in accordance with agency regulations at 36 Code of Federal Regulations 228.4.

Mineral Entry—Authority to enter public lands for the purpose of developing minerals in an orderly, organized manner.

Mineral Reserves—Known mineral deposits that are recoverable under present conditions but are as yet undeveloped.

Mineral Rights—An ownership interest in minerals that may or may not be owned by the person or party having title to the surface estate.

Mineral Survey—A cadastral survey of a lode claim, placer claim, or millsite with all its notes and plats. This type of survey is executed by a U.S. mineral surveyor for the purpose of marking the legal boundaries of mining claims on the public domain prior to conveyance of by patent. The location and estimated value of mining improvements are returned by the survey but no reference is made to mineral deposits (Glossaries of Bureau of Land Management Surveying and Mapping Terms).

Mineral Survey Fractions—Small parcels of National Forest System lands interspersed with or adjacent to lands transferred out of Federal ownership under the mining laws (36 Code of Federal Regulations 254.31, Definitions).

Mineral Withdrawal—An action that withdraws Federal public domain land from any mining and mineral development activity or staking of a mining claim within the boundaries of the designated area, excluding areas with valid prior existing rights.

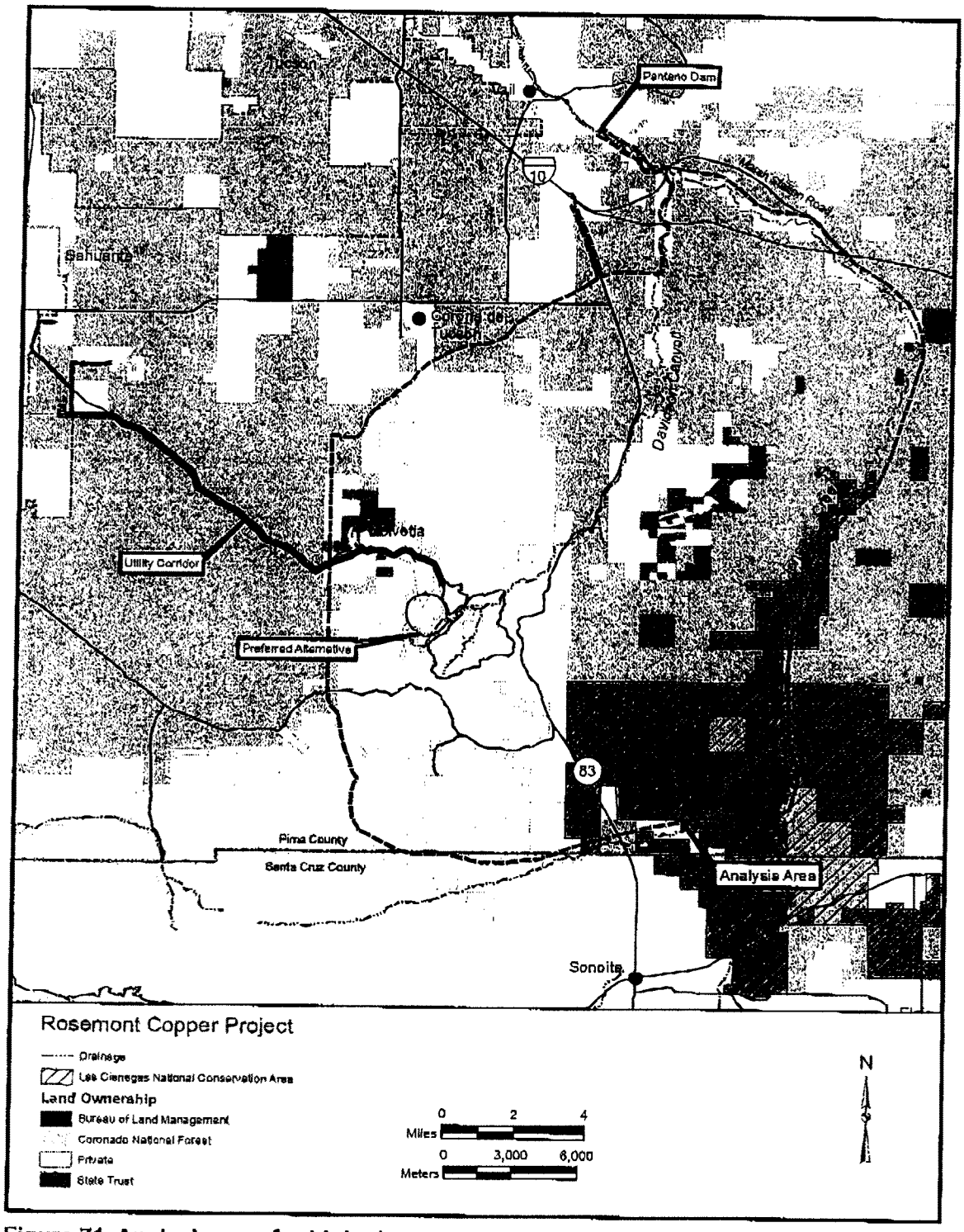

Figure 71. Analysis area for biological resources

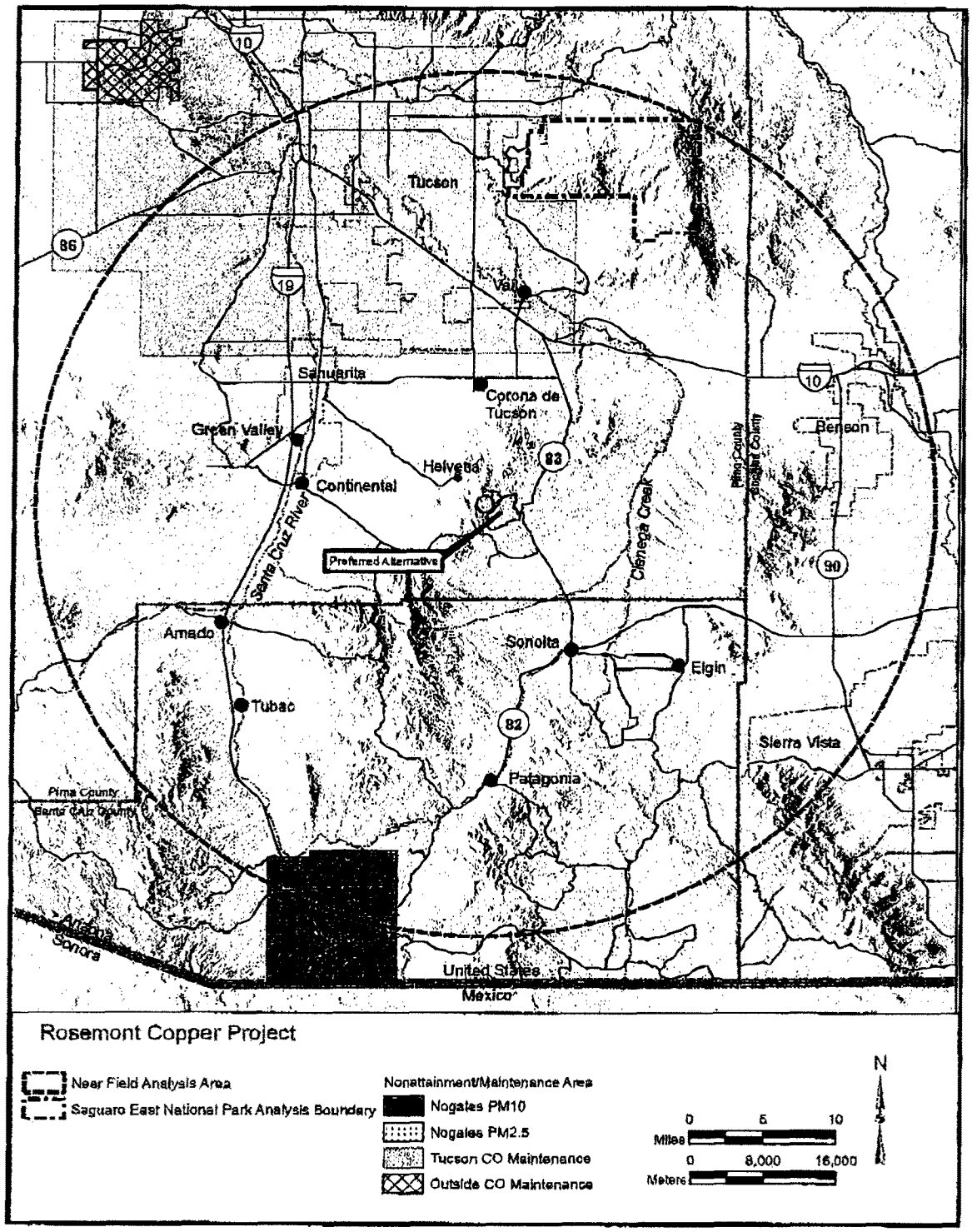

Figure 38. Analysis area and nonattainment and maintenance areas for air

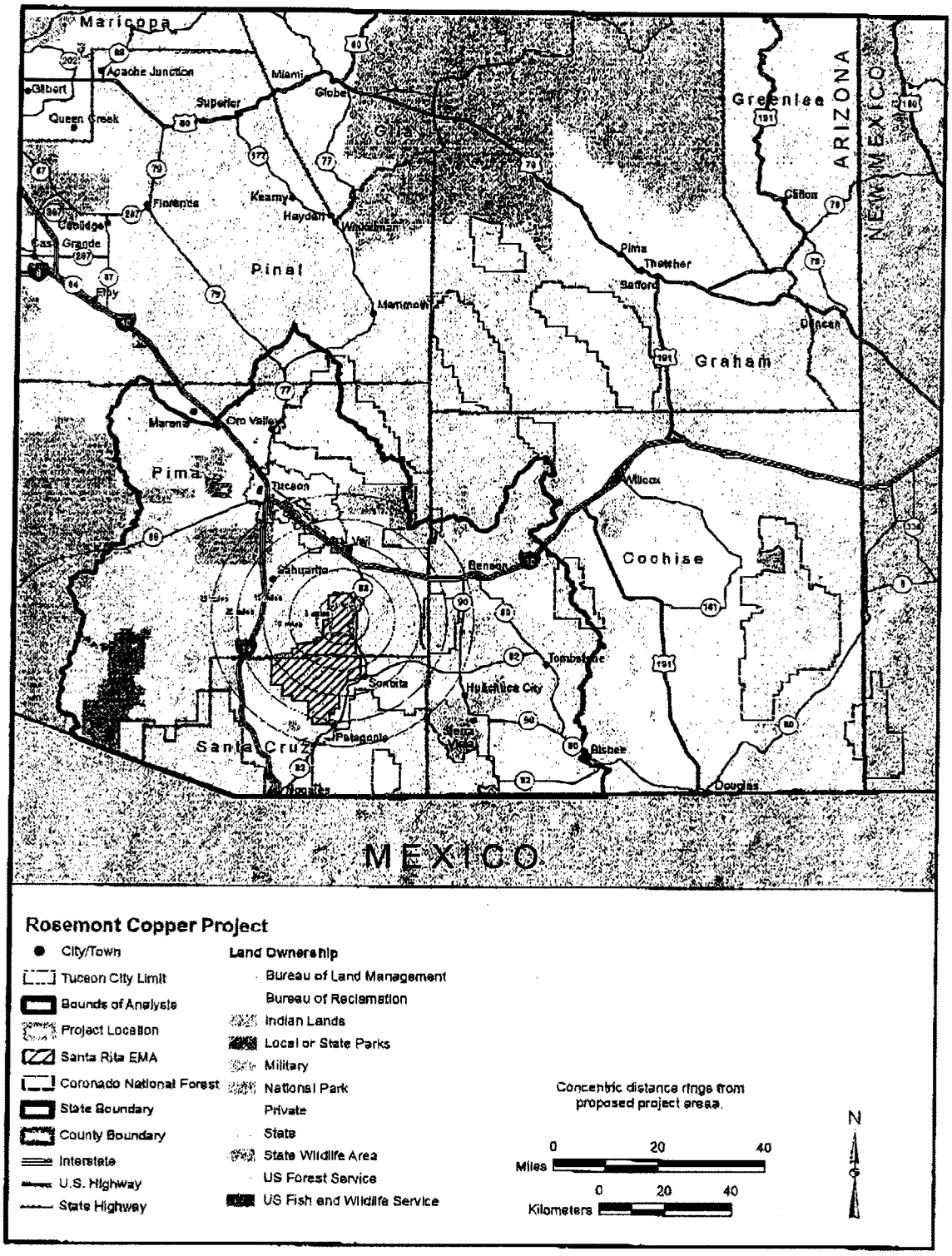

Figure 80. Analysis area for visual resources

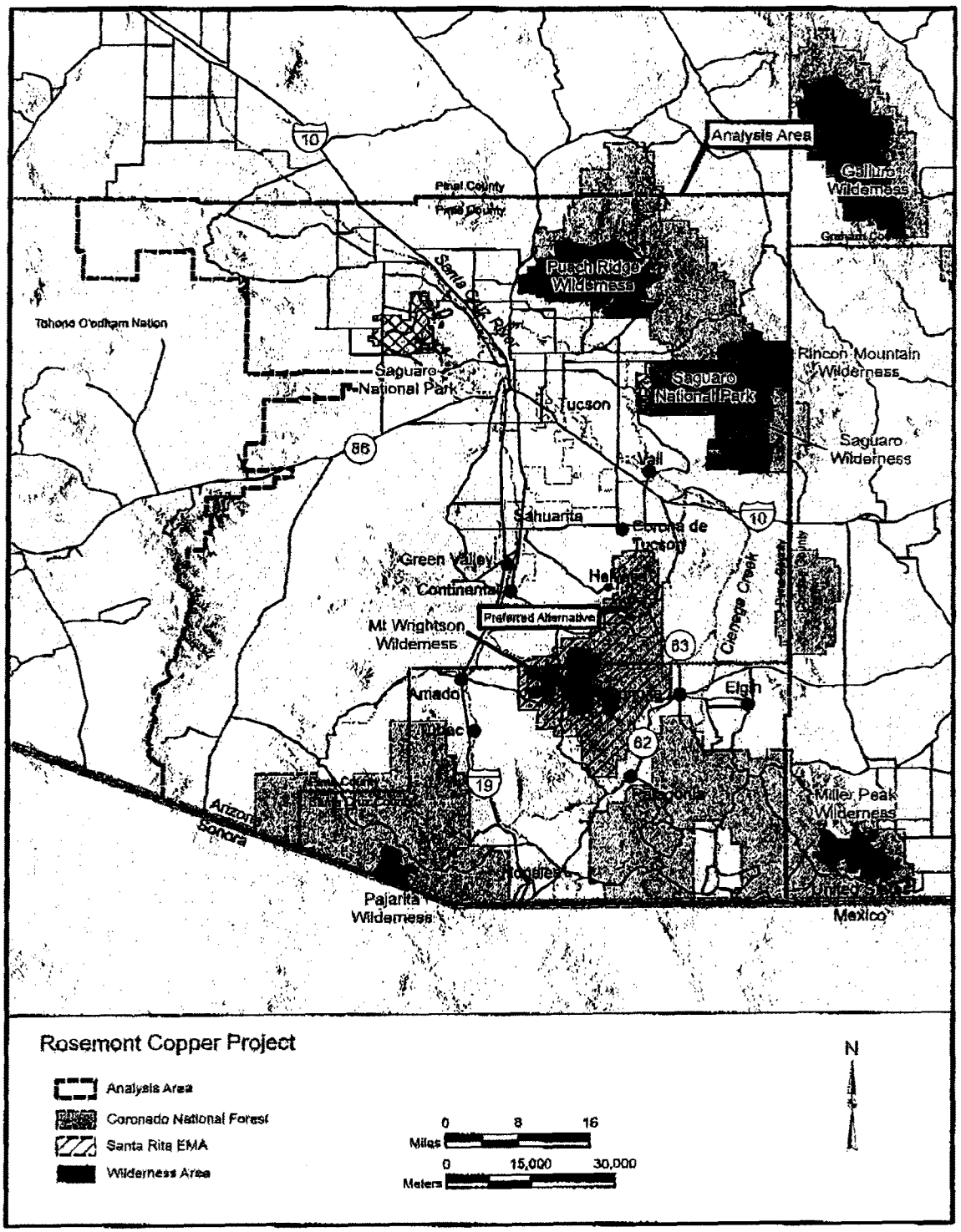

Figure 89. Analysis area for recreation and wilderness resources

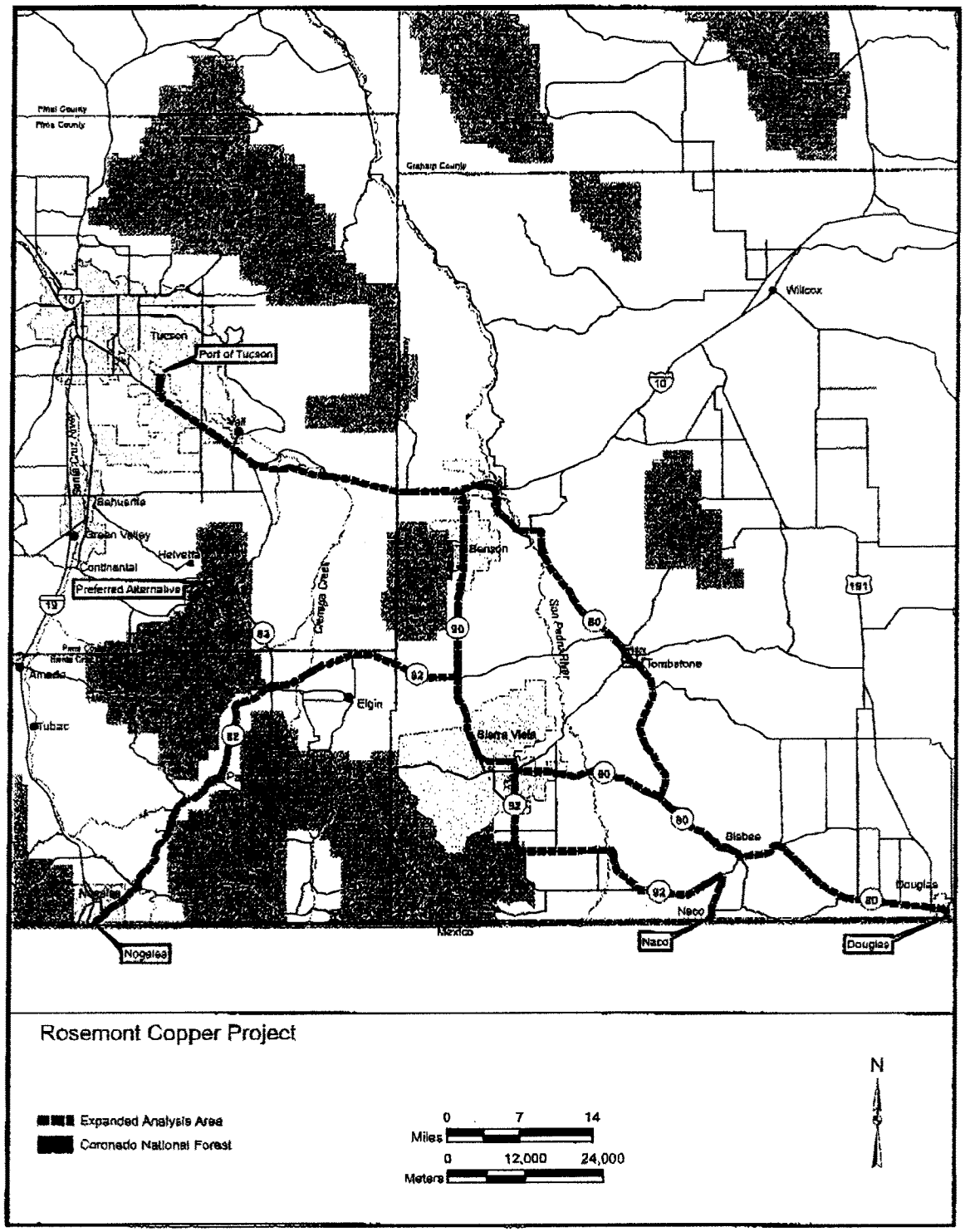

Figure 102. Transportation/access expanded analysis area

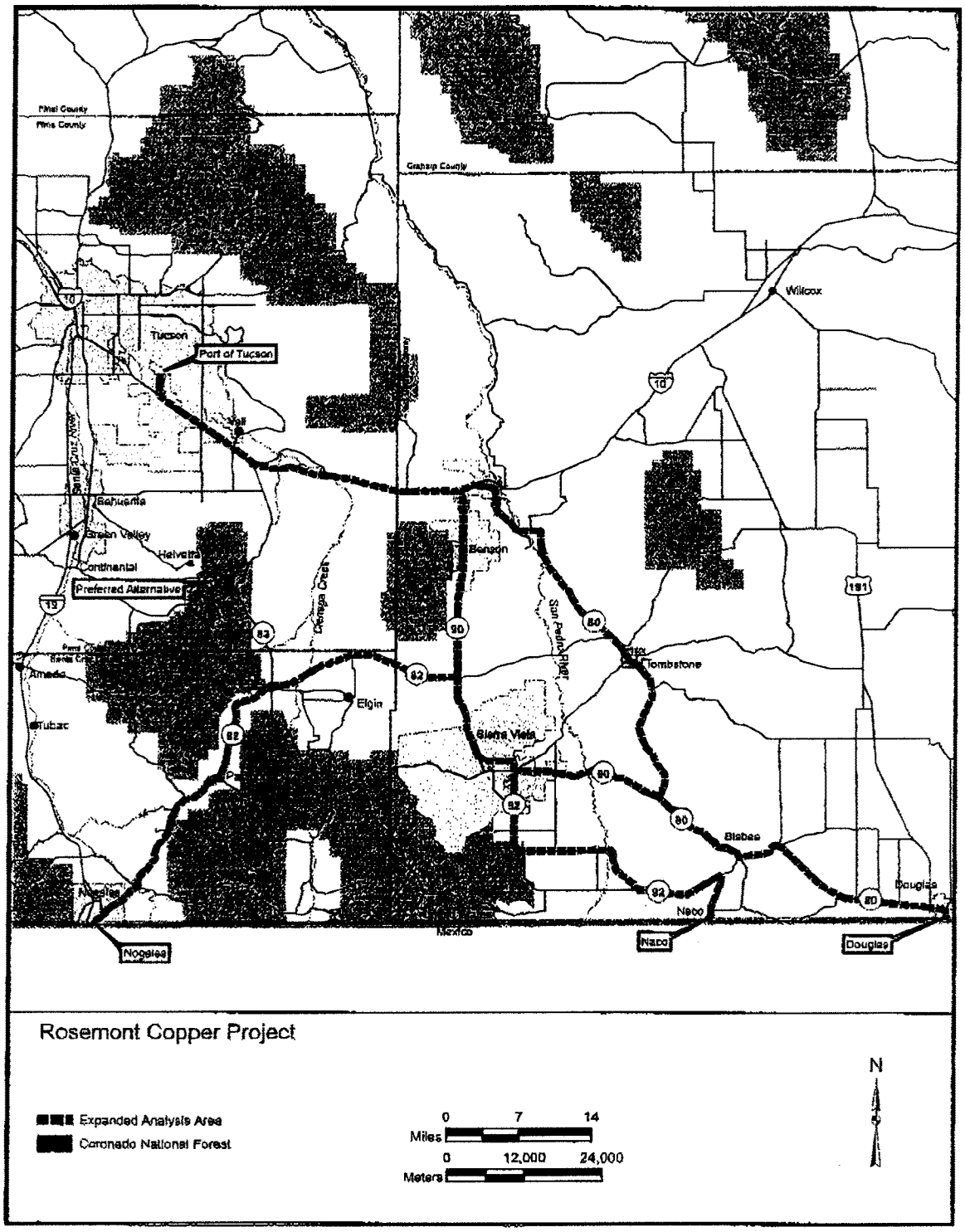

Figure 102. Transportation/access expanded analysis area

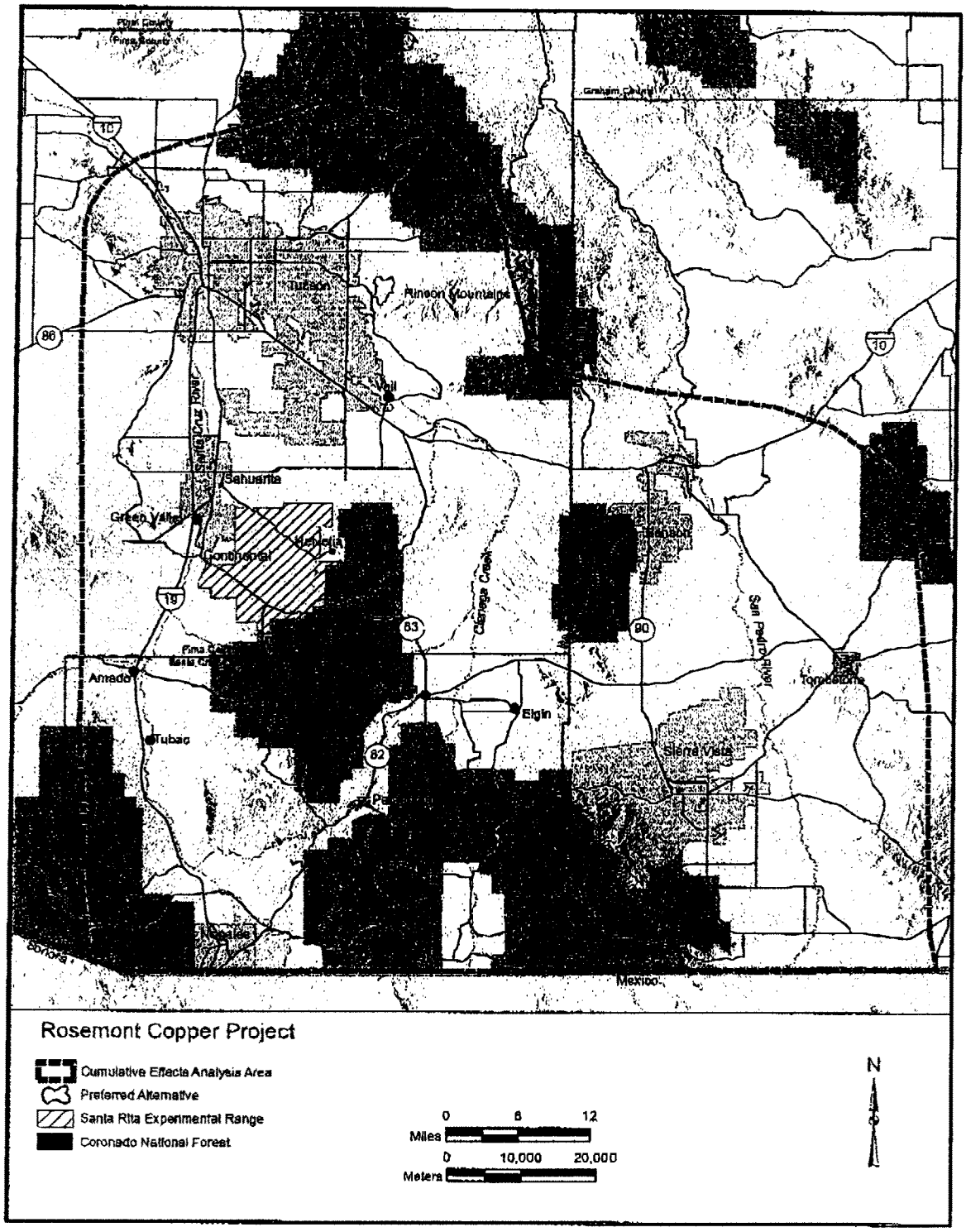

Figure 110. Analysis area for cumulative effects on cultural resources

ATTACHMENT #3

All 162 species listed by the Coronado as Sensitive are evaluated in this report (Forest Service 2007a, 2007b). It was determined that 71 of these species would be evaluated further. Two of these species (Sonoran desert tortoise (*Gopherus morafkai*) and yellow-billed cuckoo (*Coccyzus americanus*)) are candidates for listing as endangered or threatened. For a more detailed evaluation of these 71 Forest Service Sensitive species, please reference the biological evaluation for the Rosemont Copper Project (SWCA Environmental Consultants (SWCA) 2013a). All 33 species that are listed as Sensitive by the BLM Tucson Office and that have verified or probable/possible occurrences in the analysis area are evaluated in this report (BLM 2005). Two of these species (Sonoran desert tortoise and yellow-billed cuckoo) are candidates for listing as endangered or threatened. It was determined that 21 of these species would be evaluated further. For a more detailed evaluation of BLM Sensitive species, please reference the biological evaluation (SWCA 2013a).

There are 33 MIS and one group of cavity-nesting birds on the Coronado National Forest (Forest Service 2011). Thirteen MIS and one group were selected for analysis at the project level based on their known occurrence within or near the project area or the presence of suitable habitat (SWCA 2013b): American peregrine falcon (*Falco peregrinus anatum*), Arizona ridge-nosed rattlesnake (*Crotalus willardi willardi*), Baird's sparrow (*Ammodramus bairdii*), Bell's vireo (*Vireo bellii*), black bear (*Ursus americanus*), Gould's turkey (*Meleagris gallopavo mexicana*), Montezuma (Mearn's) quail (*Cyrtonyx montezumae*), northern beardless-tyrannulet (*Camptostoma imberbe*), northern gray hawk (*Buteo nitidus*),western barking frog (*Craugastor augusti cactorum*), and white-tailed deer (*Odocoileus virginianus*), as well as primary and secondary cavity nesters. Two MIS, Gila chub and Gila topminnow, have been evaluated in greater detail in the biological assessment (Forest Service and SWCA 2013; SWCA 2012a, 2012b) and are therefore not included for analysis in the MIS report. The remaining 19 species were eliminated from consideration in this analysis because their known distributions are well outside the project area and/or the project area does not contain suitable habitats for those species.

All 106 migratory bird species listed by the National PIF (2006) and/or the USFWS (1995) were evaluated in this report. It was determined that 70 of these species would need to be evaluated further. For a more detailed evaluation of migratory bird species, please reference the migratory bird analysis (SWCA 2013c). All 531 Species of Greatest Conservation Need in Arizona (AGFD 2012e) (see table 6) and all 13 Species of Economic and Recreational Importance in Arizona (AGFD 2012e) (see table 7) were evaluated in this report. All 44 Pima County's Multi-species Conservation Plan Covered Species (Pima County 2012b) were evaluated in this report (see table 8). In all, approximately 700 species were evaluated in this report, and it was determined that 153 species and the 1 MIS group need to be evaluated in greater detail (see table 9).[1]

[1] This includes ESA-listed, Forest Service and BLM sensitive species, and MIS. Golden eagles, migratory birds, AGFD Species of Greatest Conservation Need or Species of Economic and Recreational Importance, and Pima County Covered Species are not evaluated in greater detail, hence are not carried forward into other resource reports, unless they are also on other lists.

Bird Observations

Date Range: Change Date
1/1 - 12/31, 1900-2013**Combine Years**

For Change Location
[Santa Rita Mountains, Coronado National Forest]

Last updated ~20 hrs ago.

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mallard	MAP												
Ring-necked Duck	MAP												
Scaled Quail	MAP												
Gambel's Quail	MAP												
Montezuma Quail	MAP												
Wild Turkey	MAP												
Pied-billed Grebe	MAP												
American White Pelican	MAP												
Great Blue Heron	MAP												
Snowy Egret	MAP												
Green Heron	MAP												
White-faced Ibis	MAP												
Black Vulture	MAP												
Turkey Vulture	MAP												
Osprey	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-tailed Kite	MAP												
Golden Eagle	MAP												
Northern Harrier	MAP												
Sharp-shinned Hawk	MAP												
Cooper's Hawk	MAP												
Sharp-shinned/Cooper's Hawk	MAP												
Northern Goshawk	MAP												
Accipiter sp.	MAP												
Common Black-Hawk	MAP												
Harris's Hawk	MAP												
Red-shouldered Hawk	MAP												
Broad-winged Hawk	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gray Hawk	MAP												
Short-tailed Hawk	MAP												
Swainson's Hawk	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zone-tailed Hawk	MAP												
Red-tailed Hawk	MAP												
Ferruginous Hawk	MAP												
Buteo sp.	MAP												
hawk sp.	MAP												
Virginia Rail	MAP												
American Coot	MAP												
Killdeer	MAP												
Western Sandpiper	MAP												
Wilson's Snipe	MAP												
Rock Pigeon	MAP												
Band-tailed Pigeon	MAP												
Eurasian Collared-Dove	MAP												
White-winged Dove	MAP												
Mourning Dove	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Inca Dove	MAP												
Common Ground-Dove	MAP												
Yellow-billed Cuckoo	MAP												
Greater Roadrunner	MAP												
Barn Owl	MAP												
Flammulated Owl	MAP												
Western Screech-Owl	MAP												
Whiskered Screech-Owl	MAP												
Great Horned Owl	MAP												
Northern Pygmy-Owl	MAP												
Elf Owl	MAP												
Burrowing Owl	MAP												
Spotted Owl	MAP												
Long-eared Owl	MAP												
Lesser Nighthawk	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Nighthawk	MAP												
nighthawk sp.	MAP												
Common Poorwill	MAP												
Buff-collared Nightjar	MAP												
Mexican Whip-poor-will	MAP												
Vaux's Swift	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-throated Swift	MAP												
Magnificent Hummingbird	MAP												
Plain-capped Starthroat	MAP												
Blue-throated Hummingbird	MAP												
Lucifer Hummingbird	MAP												
Black-chinned Hummingbird	MAP												
Anna's Hummingbird	MAP												
Costa's Hummingbird	MAP												
Broad-tailed Hummingbird	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rufous Hummingbird	MAP												
Allen's Hummingbird	MAP												
Rufous/Allen's Hummingbird	MAP												
Calliope Hummingbird	MAP												
Selasphorus sp.	MAP												
Broad-billed Hummingbird	MAP												
Berylline Hummingbird	MAP												
Violet-crowned Hummingbird	MAP												
White-eared Hummingbird	MAP												
hummingbird sp.	MAP												
Eared Quetzal	MAP												
Elegant Trogon	MAP												
Belted Kingfisher	MAP												
Lewis's Woodpecker	MAP												
Acorn Woodpecker	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gila Woodpecker	MAP												
Williamson's Sapsucker	MAP												
Yellow-bellied Sapsucker	MAP												
Red-naped Sapsucker	MAP												
Yellow-bellied/Red-naped Sapsucker	MAP												
Red-breasted Sapsucker	MAP												
Red-naped x Red-breasted Sapsucker (hybrid)	MAP												
sapsucker sp.	MAP												
Ladder-backed Woodpecker	MAP												
Hairy Woodpecker	MAP												
Arizona Woodpecker	MAP												
Picoides sp.	MAP												
Northern Flicker	MAP												
Gilded Flicker	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northern/Gilded Flicker	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
woodpecker sp.	MAP												
Crested Caracara	MAP												
American Kestrel	MAP												
Merlin	MAP												
Peregrine Falcon	MAP												
Prairie Falcon	MAP												
large falcon sp.	MAP												
small falcon sp.	MAP												
diurnal raptor sp.	MAP												
Northern Beardless-Tyrannulet	MAP												
Olive-sided Flycatcher	MAP												
Greater Pewee	MAP												
Western Wood-Pewee	MAP												
Eastern Wood-Pewee	MAP												
Western/Eastern Wood-Pewee	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Willow Flycatcher	MAP												
Least Flycatcher	MAP												
Hammond's Flycatcher	MAP												
Gray Flycatcher	MAP												
Dusky Flycatcher	MAP												
Gray/Dusky Flycatcher	MAP												
Hammond's/Dusky Flycatcher	MAP												
Pacific-slope Flycatcher	MAP												
Cordilleran Flycatcher	MAP												
Pacific-slope/Cordilleran Flycatcher (Western Flycatcher)	MAP												
Buff-breasted Flycatcher	MAP												
Empidonax sp.	MAP												
Black Phoebe	MAP												
Eastern Phoebe	MAP												
Say's Phoebe	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Vermilion Flycatcher	MAP												
Dusky-capped Flycatcher	MAP												
Ash-throated Flycatcher	MAP												
Brown-crested Flycatcher	MAP												
Myiarchus sp.	MAP												
Sulphur-bellied Flycatcher	MAP												
Cassin's Kingbird	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Thick-billed Kingbird	MAP												
Western Kingbird	MAP												
Cassin's/Western Kingbird	MAP												
yellow-bellied kingbird sp.	MAP												
Rose-throated Becard	MAP												
Loggerhead Shrike	MAP												
White-eyed Vireo	MAP												
Bell's Vireo	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gray Vireo	MAP												
Plumbeous Vireo	MAP												
Cassin's Vireo	MAP												
Plumbeous/Cassin's Vireo	MAP												
solitary vireo sp.	MAP												
Hutton's Vireo	MAP												
Warbling Vireo	MAP												
Red-eyed Vireo	MAP												
Yellow-green Vireo	MAP												
vireo sp.	MAP												
Steller's Jay	MAP												
Western Scrub-Jay	MAP												
Mexican Jay	MAP												
Aphelocoma sp.	MAP												
Chihuahuan Raven	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Raven	MAP												
raven sp.	MAP												
Horned Lark	MAP												
Northern Rough-winged Swallow	MAP												
Purple Martin	MAP												
Tree Swallow	MAP												
Violet-green Swallow	MAP												
Bank Swallow	MAP												
Barn Swallow	MAP												
Cliff Swallow	MAP												
swallow sp.	MAP												
Mountain Chickadee	MAP												
Bridled Titmouse	MAP												
Juniper Titmouse	MAP												
Verdin	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bushtit	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red-breasted Nuthatch	MAP												
White-breasted Nuthatch	MAP												
Pygmy Nuthatch	MAP												
Brown Creeper	MAP												
Rock Wren	MAP												
Canyon Wren	MAP												
House Wren	MAP												
Pacific Wren	MAP												
Winter Wren	MAP												
Pacific/Winter Wren	MAP												
Bewick's Wren	MAP												
Cactus Wren	MAP												
Blue-gray Gnatcatcher	MAP												
Black-tailed Gnatcatcher	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Black-capped Gnatcatcher	MAP												
Black-tailed x Black-capped Gnatcatcher (hybrid)	MAP												
gnatcatcher sp.	MAP												
American Dipper	MAP												
Golden-crowned Kinglet	MAP												
Ruby-crowned Kinglet	MAP												
Eastern Bluebird	MAP												
Western Bluebird	MAP												
Mountain Bluebird	MAP												
bluebird sp.	MAP												
Townsend's Solitaire	MAP												
Brown-backed Solitaire	MAP												
Swainson's Thrush	MAP												
Hermit Thrush	MAP												
Catharus sp.	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wood Thrush	MAP												
Rufous-backed Robin	MAP												
American Robin	MAP												
Varied Thrush	MAP												
Aztec Thrush	MAP												
Gray Catbird	MAP												
Northern Mockingbird	MAP												
Sage Thrasher	MAP												
Brown Thrasher	MAP												
	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Curve-billed Thrasher													
Crissal Thrasher	MAP												
European Starling	MAP												
Cedar Waxwing	MAP												
Phainopepla	MAP												
Olive Warbler	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chestnut-collared Longspur	MAP												
Ovenbird	MAP												
Worm-eating Warbler	MAP												
Louisiana Waterthrush	MAP												
Northern Waterthrush	MAP												
Golden-winged Warbler	MAP												
Black-and-white Warbler	MAP												
Crescent-chested Warbler	MAP												
Orange-crowned Warbler	MAP												
Lucy's Warbler	MAP												
Nashville Warbler	MAP												
Virginia's Warbler	MAP												
MacGillivray's Warbler	MAP												
Kentucky Warbler	MAP												
Common Yellowthroat	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hooded Warbler	MAP												
American Redstart	MAP												
Northern Parula	MAP												
Tropical Parula	MAP												
Yellow Warbler	MAP												
Yellow-rumped Warbler	MAP												
Yellow-throated Warbler	MAP												
Grace's Warbler	MAP												
Black-throated Gray Warbler	MAP												
Townsend's Warbler	MAP												
Hermit Warbler	MAP												
Townsend's x Hermit Warbler (hybrid)	MAP												
Fan-tailed Warbler	MAP												
Rufous-capped Warbler	MAP												
Wilson's Warbler	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red-faced Warbler	MAP												
Painted Redstart	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Slate-throated Redstart	MAP												
Yellow-breasted Chat	MAP												
warbler sp.	MAP												
Green-tailed Towhee	MAP												
Spotted Towhee	MAP												
Rufous-crowned Sparrow	MAP												
Canyon Towhee	MAP												
Abert's Towhee	MAP												
Rufous-winged Sparrow	MAP												
Botteri's Sparrow	MAP												
Cassin's Sparrow	MAP												
Chipping Sparrow	MAP												
Clay-colored Sparrow	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Brewer's Sparrow	MAP												
Black-chinned Sparrow	MAP												
Vesper Sparrow	MAP												
Lark Sparrow	MAP												
Five-striped Sparrow	MAP												
Black-throated Sparrow	MAP												
Sage Sparrow	MAP												
Lark Bunting	MAP												
Savannah Sparrow	MAP												
Grasshopper Sparrow	MAP												
Baird's Sparrow	MAP												
Fox Sparrow	MAP												
Song Sparrow	MAP												
Lincoln's Sparrow	MAP												
White-throated Sparrow	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
White-crowned Sparrow	MAP												
Golden-crowned Sparrow	MAP												
Dark-eyed Junco	MAP												
Yellow-eyed Junco	MAP												
Dark-eyed/Yellow-eyed Junco	MAP												
sparrow sp.	MAP												
Hepatic Tanager	MAP												
Summer Tanager	MAP												
Scarlet Tanager	MAP												
Western Tanager	MAP												
Flame-colored Tanager	MAP												
	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Western x Flame-colored Tanager (hybrid)													
Piranga sp.	MAP												
Northern Cardinal	MAP												
Pyrrhuloxia	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northern Cardinal/Pyrrhuloxia	MAP												
Rose-breasted Grosbeak	MAP												
Black-headed Grosbeak	MAP												
Rose-breasted/Black-headed Grosbeak	MAP												
Blue Grosbeak	MAP												
Lazuli Bunting	MAP												
Indigo Bunting	MAP												
Varied Bunting	MAP												
Painted Bunting	MAP												
bunting sp.	MAP												
Dickcissel	MAP												
Red-winged Blackbird	MAP												
Eastern Meadowlark	MAP												
Western Meadowlark	MAP												
Eastern/Western Meadowlark	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Yellow-headed Blackbird	MAP												
Brewer's Blackbird	MAP												
Great-tailed Grackle	MAP												
Bronzed Cowbird	MAP												
Brown-headed Cowbird	MAP												
Bronzed/Brown-headed Cowbird	MAP												
Hooded Oriole	MAP												
Bullock's Oriole	MAP												
Scott's Oriole	MAP												
oriole sp.	MAP												
blackbird sp.	MAP												
Purple Finch	MAP												
Cassin's Finch	MAP												
House Finch	MAP												
Carpodacus sp.	MAP												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red Crossbill	MAP												
Pine Siskin	MAP												
Lesser Goldfinch	MAP												
Lawrence's Goldfinch	MAP												

287 species (+51 other taxa)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
American Goldfinch	MAP												
Evening Grosbeak	MAP												
House Sparrow	MAP												
passerine sp.	MAP												

KEY:| = insufficient data | [redacted] = rare to widespread

Download Histogram Data

© Audubon and Cornell Lab of Ornithology | Affiliates and Sponsors | Privacy Policy | Contact | FAQ | Glossary

Quotations from the FEIS: (Highlights added) Attachment #3

The FEIS states on Page 364: "The mine pit lake, because of its contact with exposed rock formations, could develop hazardous water quality conditions, which could cause impacts to groundwater, birds and wildlife."

Regarding nitrogen residue, on Page 388 the FEIS states: "The exposure pathway for this residue in the pit lake would be **limited to birds and wildlife that could readily access the pit lake.**" Further down in the paragraph: "Under these scenarios, estimates suggest **that if chronic exposure occurred there could be negative impacts to wildlife and aquatic species due to ammonia levels in the lake.**"

In the comparison to the pit lake with Surface Water Quality Standards on Page 389, it states: "The mine pit lake is not a navigable water and is not regulated under surface water quality regulations. **However, surface water quality standards are specific to wildlife use and are therefore useful solely as a tool for assessing the potential impacts to wildlife.**"

On the top of Page 390 it states: **"Wildlife most likely to be indirectly impacted includes any animals that prey on insects or birds that have come in contact with the water in the pit lake." Acute exposure by avian species is the most likely scenario to occur**, given the depth and isolation of the pit lake and the general inaccessibility by wildlife. Chronic exposure is unlikely to occur directly, but **chronic exposure could occur indirectly through predation on insects."**

Further down this page in the section comparing the pit lake to surface water quality standards, the FEIS indicates that the geochemistry of the pit lake water quality could exceed surface water standards for **acute exposure for copper and zinc and chronic exposure for cadmium, copper, lead, mercury selenium and zinc** depending on the scenario.

Given these statements, 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"**, but it does not.

2011 Comments: (Highlights added) *Attachment #4*

My original 2011 comment letter to the DEIS had the same questions comments and concerns as this objection. The entire letter is attached. I have included a portion of that letter for ease of reference:

Still thinking about the CAP issue, I went back to the table with the exhibits regarding the ground water impact. That's when I realized there was an issue which I haven't heard mentioned very much; the "pit lake". I noticed the pit lake on the section when I was looking to see how the aquifer around the mine would be affected. I was surprised how deep the water in the lake will eventually be. I was told that the surrounding aquifer will drain into the pit, a sump, and while there is mining, the pit will be de-watered. After secession of operation, the lake would form. Several new questions came to mind.

1. *I asked what will happen to the water that is pumped from the pit while it is de-watered. How much would there be and how would it be used? What is the water quality? The person at the table was not able to answer the questions.*

2. *I asked about the water quality in the 'pit lake" after it fills? I was told that the good news is that the existing rock will help to keep the lake less acidic than similar mine lakes. I was also told something about the water meeting "water quality standards", but "It probably wouldn't be a good idea to let the water touch your skin". This spawned another question.*
3. *According to the exhibit this will be a large and deep body of water. I asked what will be done to keep water fowl, especially migratory water fowl from using the "pit lake". I was told that this item is not addressed in the DEIS and would be addressed in the FEIS.*

I have gone back to see if these issues are addressed in the DEIS. I did not find these issues addressed in the Executive Summary, so I searched all of the DEIS documents.

1. *I did find the answer in Volume 1, Chapters 2, Water Supply, Page 29 and Chapter 3, Ground Water Quantity, Page 230 that the water pumped from the pit would be used for processing. The volume is 16-27,000 acre-feet.*
2. *I found the reference to the Predicted Geochemistry of the pit lake discussed in Volume 1, Chapter 3 on Pages 292-294. On Page 294, it states that Silver, Cadmium, Copper, Lead and Mercury "exceeds" the surface water standards under all four alternatives. The final paragraph says that the potential impacts are analyzed in the "Biological Resources" section of this "FEIS". Is this a typo or is the FEIS where the issue will be addressed?*
3. *Neither Water Fowl nor Migratory Water Fowl are listed in Index or Glossary and there is no reference that I could find in the entire document. The DEIS says that the lake will ultimately have a surface area of 213 acres on Page 291. That is a surface area larger than Rainbow Lake and several other lakes in Arizona.*

   *One reason that waterfowl may not be listed can be found in the Draft Migratory Bird Analysis SWCA 2011d. The text on Page 19 states that "**Because there is no significant standing water in the proposed project area, water birds were filtered out from further consideration**". Species listed as waterfowl in Table 3 on the same page are shown as "N - Not analyzed in detail within the Migratory Bird Report" under the Evaluation Section. A note at the end of the table states "Species that are categorically excluded are waterfowl (i.e., no habitat), rare migrants… This may be a true statement for the existing condition, but will not be true after mining is concluded.*

I think the issues, impact and mitigation related to the "pit lake" need to be more thoroughly discussed. I am concerned that they won't be addressed until the Final EIS.

Furthermore, I believe that the Draft EIS is being rushed and is not complete enough to give cogent comments. ***I also believe that all of the impacts and specific mitigation measures for those impacts need to be provided in a Revised DEIS so that the public has a chance to see and comment on what could eventually be developed on the Mineral Hill and the impacts of that development will be.*** *I make these statements for the following reasons:*

Comments 1-4 not shown.

5. ***Inadequate information.*** *Other than water quality associated with the aquifer and the impact to the Desert Bighorn, the remaining issues, impacts and mitigation related to the "pit lake" are not addressed.* ***What are all of the biological impacts? What are the long term impacts? What are the mitigation methods? How will the public be affected?***

RON BARBER
2ND DISTRICT, ARIZONA

COMMITTEES:
HOUSE ARMED SERVICES
TACTICAL AIR AND LAND FORCES
READINESS

HOMELAND SECURITY
OVERSIGHT AND MANAGEMENT
EFFICIENCY, RANKING MEMBER

SMALL BUSINESS
ECONOMIC GROWTH, TAX AND
CAPITAL ACCESS
AGRICULTURE, ENERGY AND TRADE

Congress of the United States
House of Representatives
Washington, DC 20515–0302

WEBSITE:
www.barber.house.gov

1029 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE (202) 225-2542
FAX (202) 225-0378

TUCSON OFFICE:
3945 E. FORT LOWELL, SUITE 211
TUCSON, AZ 85712
PHONE (520) 881-3588
FAX (520) 322-9490

SIERRA VISTA OFFICE:
77 CALLE PORTAL, SUITE B-160
SIERRA VISTA, AZ 85635
PHONE (520) 459-3115
FAX (520) 459-5419

FACEBOOK:
facebook.com/RepRonBarber

TWITTER:
twitter.com/RepRonBarber

FACSIMILE TRANSMISSION			
To:	Ms. Laura Vaught, Associate Administrator for Congressional Affairs		
Fax:	(202) 501-1519		
From:	Sean Goslar	Date:	February 12, 2014
Notes:	Re: Mr. Chuck Martin	Pages to follow:	36

Congressional Request

Thank you.

Please contact me if you have any questions.

If you experience difficulties with this transmission or you are not the intended recipient please immediately disregard this transmission and Contact:

CALL: (520) 881-3588 or
FAX: (520) 322-9490