United States Department of Agriculture

Final Programmatic Environmental Impact Statement for Revision of the Coronado National Forest Land and Resource Management Plan

Cochise, Graham, Pima, Pinal, and Santa Cruz Counties, Arizona, and Hidalgo County, New Mexico

Volume 2: Appendix, Sections A through G

Forest Service Southwestern Region MB-R3-05-16 April 2018

Note: We make every effort to create documents that are accessible to individuals of all abilities; however, limitations with our word processing programs may prevent some parts of this document from being readable by computer-assisted reading devices. If you need assistance with this document, please contact the Coronado National Forest at (520) 388-8300.

Front cover photos (clockwise from upper left): Upper Kielberg in the Galiuro Mountains, Sky Island Scenic Byway, Ak Chin Basketmakers, Rustler Park, Parker Canyon Lake, adobe building at Kentucky Camp, poppies in the Santa Rita Mountains, and Mexican spotted owl.

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Appendix A. Public Comments and Responses

Introduction

This appendix is a summary of public comments received by the U.S. Department of Agriculture, Forest Service (Forest Service, or agency) regarding the "Draft Programmatic Environmental Impact Statement for Revision of the Coronado National Forest Land and Resource Management Plan" and responses to those comments. The comment period ran from November 22, 2013 to March 6, 2014.We received 2,274 responses. Of these, approximately 1,647 were form letters; the remaining letters consisted of original responses or form letters plus responses.

A response is a single, whole submission that may take the form of a letter, email, fax, presentation at an organization-sponsored public meeting, or documented conversation. Each response may contain anywhere from one to several hundred comments.[1] Many of the responses were original, including those submitted by individuals and those from agencies and organizations. Some were form letters. Form letters are two or more letters that contain identical text but are submitted by different people.

Each original letter and an example of the form letter were analyzed to ensure the concerns of all respondents were considered. In addition, if a respondent added information to a form letter, and the additional information was not redundant to the comment already in the form itself, this content also was analyzed. The interdisciplinary planning team prepared responses for each concern statement based on its merits, regardless of the source or whether the concern statement was expressed by many people or by one person. This appendix documents the Coronado National Forest's responses to substantive comments, which are addressed as prescribed in 40 CFR section 1503.4 in the following ways:

- modifying the proposed action alternative and alternatives
- developing or analyzing alternatives not given detailed consideration in the draft environmental impact statement
- supplementing, improving, or modifying the analysis that the draft environmental impact statement documented;
- making factual corrections
- explaining why the comments need no further agency response

The comments were processed using content analysis, which is a systematic process designed to provide a mailing list of respondents, extract topics from each letter, evaluate similar topics from different responses, and identify specific topics of concern.

A summary analysis of the public comments is available in the project record and at the following webpage:
http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702.

[1] Responses refer to single, whole submissions from respondents (e.g., letters, emails, faxes, presentations at public meetings). Comments refer to identifiable expressions of concern made within responses.

Although the analysis attempts to capture the full range of concerns raised, it should be used with caution. The respondents are self-selected; therefore, their comments do not necessarily represent the sentiments of the entire population. The analysis attempts to provide fair representation of the wide range of views submitted but makes no attempt to treat input as if it were a vote or a statistical sample. In addition, respondents' reasons for voicing viewpoints are varied, subtle, or detailed. In an effort to provide a succinct summary of all of the concerns raised, many subtleties are not conveyed in this summary.

Numbers that follow each topic heading and each concern statement correspond to the coding systems used in the content analysis process. The codes for the topic headings are listed below. The individual concern statements are coded to include the topic heading code as well as the concern statement identifier number. For example, code 10.3 at the end of a concern statement means it is the third comment under the topic heading "Decision Process." Where a coded comment number does not match the numbering in the topic heading, it was likely moved to that section because the comment fits more appropriately under that topic.[2]

Table 133. Public comment codes and corresponding concern statement topics

Code No.	Concern Statement Code Name
1	Air Quality Management
2	Bicycling
3	Biological Resources Management
4	Border Patrol Activity
5	Climate Change
6	Comment Period Extension
7	Confirm receipt of letter
8	Coordination, Consultation
9	Cultural, History, Anthropology Management
10	Decision Process
11	Designated Wilderness Areas
12	Desired Conditions
13	Developed Recreation and Facilities
14	Dispersed Recreation Management
15	Domestic Livestock, Grazing Management
16	Economic and Social Actions, Analyses
17	Effects Analysis
18	Enforcement
19	Fees and Permits
20	Fire and Fuels Management
21	Fuel Treatment, Reduction
22	Hunting, Shooting
23	Illegal uses (border)

[2] Due to the overlap of comments among many topics, the coding system is not precise.

Code No.	Concern Statement Code Name
24	Impacts of illegal uses
25	Individual Species
26	International Border issues
27	Invasive Vegetation Treatment
28	Issues, Alternatives
29	Land Designations/Management
30	Land Ownership, Uses
31	Leasable Minerals
32	Minerals & Geology Management
33	Monitoring
34	Motorized Recreation Management
35	No Further Response Required
36	Objectives
37	Other Activities Management
38	Outreach/Education
39	Plan Components
40	Prescribed Burns
41	Proposed Action, Decision
42	Proposed Mines (e.g., Rosemont)
43	Public Health, Safety
44	Public Involvement
45	Recreation Management
46	Recreational Access
47	Remove from mailing list
48	Requests for Information
49	Resource & Area Management
50	Roadless Areas
51	Roles, Authorities
52	Saleable Minerals
53	Seasonal Closures/Access
54	Social Actions or Analyses
55	Soils Management
56	Standards and Guidelines (level of discretion)
57	Suppression
58	Transportation System Management (& non-rec. access)
59	Vegetation Management
60	Water, Watershed Management
61	Wildland/Urban Interface
62	Wildlife Corridors - general
63	Wildlife Corridors across International Border

Code No.	Concern Statement Code Name
64	Wildlife/Animals Management
65	Withdrawal of Lands

The listed topic headings are grouped by the following broad categories:

- Decision-making Process, Public Involvement, and Coordination
- Draft Environmental Impact Statement, Alternatives, and Analysis
- Natural Resources Management
- Recreation Management
- Lands Management
- Socio-economic Concerns
- Transportation Management
- Administrative Comments

Some concern statements shown in the response to comments section are combinations of similar comments, with differences separated by a semicolon. For example, many people may have stated: "The Forest Service should coordinate with local and regional interests . . :," but their specific information about that primary comment may differ like so:

- "to provide input into developing management direction
- to leverage resources and funding
- to include the Southwestern Research Station, the Chiricahua Regional Council, grazing permittees, cabin owners, and local business, and scientific interest representatives"

In those instances, the concern statement may be fairly long because it includes more specific information.

There are numerous responses in appendix A utilizing a coding system to identify desired conditions, objectives, standards, and guidelines. The coding identifies first the forest plan resource code, then the forest plan component code, followed by the component number. For example, "Guideline ISM-G-1 will result in the removal of nonnative invasive plant and animal species where fish and other special status aquatic species occur," refers to guideline 1 under invasive species management. The tables below provide the codes for the forest plan resource and the forest plan component.

Table 134. Explanation of forest plan resource coding used in responses

Abbreviation	Forest Plan Resource Codes
ARP	Animals and Rare Plants
BIP	Biophysical Features
COW	Constructed Waters
ISM	Invasive Species Management
MIN	Minerals
MTS	Motorized Transportation
NWS	Natural Water Sources
RAM	Range Management
RIA	Riparian
WET	Wetlands

Table 135. Explanation of forest plan component coding used in responses

Abbreviation	Component Code
DC	Desired Condition
VO	Vegetation Objectives
G	Guideline
S	Standard
O	Objective
MA	Management Approach

Responses to Comments

Decision-making Process, Public Involvement, and Coordination

Decision Process (10)

Concern Statement: The Forest Service should ensure that the plan adequately prioritizes multiple use requirements to comply with the National Forest Management Act and the Multiple-Use Sustained-Yield Act. (10.01)

Response: As indicated in the "Purpose of the Land and Resource Management Plan" section in chapter 1, the plan represents a revision of the 1986 Coronado National Forest Land and Resource Management Plan. This revision was conducted under the legal framework of the National Forest Management Act and the provisions of the 1982 Planning Rule. This provision has been updated and implied within the 2012 planning rule by continuing to allow the use of 1982 Planning Rule for plan revision initiated prior May 9, 2012 (36 CFR 219.17(b)(3))

Management of national forests is jointly based on the principles of conservation and multiple use. Multiple uses are prioritized and managed to be consistent with desired conditions for plan resource areas based on the evaluation of the effects analyses. The guiding principles for forest plans are closely tied with the goals established by the both acts.

The Multiple Use-Sustained-Yield Act of 1960 (section 1) states,

> "the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

The National Forest Management Act (section 6(e)(1)) states that in revising plans:

> "provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use, Sustained-Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness…"

To be complete, the revised forest plan document must be applicable with the goals of both of these acts.

Concern Statement: The Forest Service should give greater weight to the interests of taxpayers than to those of mining companies. (10.02)

Response: The Forest Service does not give greater weight to one resource interest over another. The forest plan provides for the full scope of natural resource issues impacting the national forest. Most of the guidance for mining is governed by law, regulation, and policy, which are outside the scope of the forest plan as described in chapter 3 of the environmental impact statement. Future projects and activities, of any kind, must be consistent with the forest plan and various laws, agency policy, and direction to manage vegetation and natural resources for multiple uses, all of which provide resource outputs for society, either directly or indirectly.

Concern Statement: The Forest Service should clarify the process by which decisions on the plan will be made. (10.3)

Response: As identified in the "Decision Framework" section of chapter 1 in this final environmental impact statement, the regional forester for the Southwestern Region of the Forest Service is the responsible official who will decide whether to approve the proposed action or an alternative to the proposed action. The rationale for selecting a particular alternative will be thoroughly explained in the record of decision. Upon implementation, site-specific or programmatic forest plan amendments may occur in accordance with the "Changes to the Forest Plan" section of chapter 1 in the revised forest plan.

Concern Statement: The Forest Service should revise and recirculate the draft environmental impact statement. (10.04)

Response: The Coronado National Forest followed the public participation requirements outlined in the National Environmental Policy Act, National Forest Management Act, and provisions of the 1982 Planning Rule to develop the proposed plan and draft environmental impact statement and make them available for review during a 104-day public comment period. We analyzed public comments submitted and made adjustments to the plan and environmental impact statement based on this input. A summary of changes from the proposed plan and draft environmental impact statement can be found in chapter one of the final environmental impact statement.

Comment Period Extension (6)

Concern Statement: The Forest Service should extend the comment period, because not all affected stakeholders were properly notified. (6.01)

Response: The Forest Service environmental assessment process requires a 90-day public review process for environmental impact statements. An extension of the required days is up to the discretion of the responsible official. The 90-day public review period began on November 23,

2013, the day after publication of a notice of availability of the draft environmental impact statement in the Federal Register by the U.S. Environmental Protection Agency. The comment period was extended an additional 14 days ending on March 6, 2014 to allow additional comments. In order to move from draft environmental impact statement to final environmental impact statement, the comment period must be suspended to allow comment analysis and updates to the document. See the "Public Involvement and Collaboration" section of the final environmental impact statement for a detailed description of the public comment period and analysis of comments.

Concern Statement: The Forest Service should extend the comment period because they did not provide sufficient notice to stakeholders in the process. (44.08)

Response: The Forest Service environmental assessment process requires a 90-day public review process for environmental impact statements. An extension of the required days is up to the discretion of the responsible official. The 90-day public review period began on November 23, 2013, the day after publication of a notice of availability of the draft environmental impact statement in the Federal Register by the U.S. Environmental Protection Agency. The comment period was extended an additional 14 days ending on March 6, 2014. In order to move from draft environmental impact statement to final environmental impact statement, the comment period must be suspended to allow comment analysis and updates to the document. See the "Public Involvement and Collaboration" section of the final environmental impact statement for a detailed description of the public comment period and analysis of comments.

Concern Statement: The Forest Service should ensure that adequate public notice and involvement occurs to comply with the National Forest Management Act. (44.05, 44.07)

Response: We followed the public participation requirements outlined in the National Environmental Policy Act, National Forest Management Act, and provisions of the 1982 Planning Rule to develop the proposed plan and draft environmental impact statement and make them available for review during a 90-day public comment period. The 90-day public comment period for the Coronado National Forest draft land and resource management plan and draft environmental impact statement was extended through March 6, 2014. The 90-day public review period began on November 23, 2013, the day after publication of a notice of availability of the draft environmental impact statement in the Federal Register by the U.S. Environmental Protection Agency. It had been extended an additional 14 days ending on March 6, 2014. See the "Public Involvement and Collaboration" section of the final environmental impact statement for a detailed description of the public comment period and analysis of comments.

Coordination, Consultation (8)

Concern Statement: The Forest Service should provide staff to coordinate work with volunteers to lessen the effects of staff turnover. (8.06)

Response: Staffing levels are not a forest plan-level decision. However, in the plan, individual resource or geographic areas, such as recreation or the Santa Catalina Ecosystem Management Area, include volunteer coordination as a plan management approach.

Concern Statement: The Forest Service should include the local ranger district in the list of preparers. (8.29)

Response: The forest plan was updated under "List of Preparers" to include a statement that other staff, including those on the ranger districts, contributed to the development of the plan.

Concern Statement: The Forest Service should coordinate with local and regional interests: to provide input into developing management direction; to leverage resources and funding; to include the Southwestern Research Station, the Chiricahua Regional Council, grazing permittees, cabin owners, and local business and scientific interest representatives; to include inholding landowners and resident businesses; to include Hidalgo County on the list of Cooperating Agencies; including the County of Cochise and the City of Sierra Vista; on travel management needs; to comply with the National Forest Management Act; to protect the forest resources for future generations; and to inventory, monitor, protect, and restore water resources. (8.02)

Response: We agree. One of the five topics the plan was built around was the need to improve collaboration and partnership relations with all the communities we serve. The plan does this by including desired conditions that reflect outcomes based on collaborative processes, identifying management approaches that emphasize collaboration, and reflecting an integrated approach to management of traditional uses and cultural resources.

Concern Statement: The Forest Service should coordinate with the Access Fund and the Southern Arizona Climbers Coalition because they will be allies in maintaining the resource. (8.03)

Response: We agree with your comment. We consider the Access Fund and the Southern Arizona Climbers Coalition to be key partners in maintaining the very high quality climbing experiences available on the Coronado National Forest. The forest plan contains management approaches in the "Biophysical Features" and "Recreation" sections that encourage collaborating with partners and other stakeholders, and we added specific reference to the Access Fund and the Southern Arizona Climbers Coalition to these management approaches.

Concern Statement: The Forest Service should ensure that power communication users coordinate with the Encroachment Board at Fort Huachuca as required by Arizona SB 1387. (8.04)

Response: This is neither a forest plan-level decision nor a Coronado National Forest activity. The Forest Service communications leases require all users to comply with Federal, State, and local laws. The special uses management approach calls for the following:

- maintaining existing communications sites and completing site management plans for all sites with the cooperation of communication site user groups
- continuing to establish user groups or organizations for each site

Concern Statement: The Forest Service should include a Memorandum of Understanding with the various Indian tribes to clarify how the agency and the tribes would engage in consultations. (8.05)

Response: We agree that establishing memorandum of understanding with tribes is beneficial. In chapter 2 under the "Tribal Relations" section, the following language was added as an additional management approach.

> "Cooperatively develop a memorandum of understanding with neighboring tribes for routine tribal consultation, policy development, proposed plans, projects, programs, and forest activities that have a potential to affect tribal interest."

Concern Statement: The Forest Service should clarify whether coordination with off-highway vehicle organizations has occurred. (8.07)

Response: Chapter 1 of the environmental impact statement has a description of the public involvement and collaboration efforts that have been ongoing since 2005. This involvement included stakeholders and advocates for off-highway vehicle recreation. Special presentations were made on several occasions to the Arizona Access Coalition, the Cochise County Public Lands Advisory Committee, and the Hidalgo County Public Lands Advisory Committee, three groups that include representation of off-highway vehicle recreation interests. Many of these stakeholders are also involved with Coronado National Forest travel management planning which, although it is a separate process, is coordinated with the forest plan through other focus groups and meetings that provide opportunities for coordination, comments, and access to key agency personnel related to the forest plan revision efforts.

Concern Statement: The Forest Service should coordinate with State and Federal wildlife agencies. (8.08). The Forest Service should consult with the U.S. Fish and Wildlife Service to comply with the Endangered Species Act. (8.16)

Response: The Coronado National Forest coordinates closely with the U.S. Fish and Wildlife Service, the Arizona Game and Fish Department, and the New Mexico Department of Game and Fish. Those relationships are key to the management of wildlife on National Forest System lands. Appendix B of the environmental impact statement describes our coordination with other agency planning efforts. An appendix to the forest plan, also named appendix B, describes how we work with the wildlife agencies. As part of our Endangered Species Act compliance process, Section 7 (a)(1) of the act directs Federal agencies to aid in conservation of listed species and section 7 (a)(2) requires that agencies, through consultation with the U.S. Fish and Wildlife Service, ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitat. The Forest Service consulted with, and received a favorable biological opinion from, the U.S. Fish and Wildlife Service.

Concern Statement: The Forest Service should include policies that comply with the Religious Freedom Restoration Act, the American Indian Religious Freedom Act, and the United Nations Declaration on the Rights of Indigenous Peoples. (8.09)

Response: The Religious Freedom Restoration Act and the American Indian Religious Freedom Act are among the laws the Forest Service complies with and those laws are identified in forest plan appendix E, “Other Sources of Information.” The United Nations declaration does not contain policy and procedures but does lay out goal statements that are reflected by the plan components in the “Cultural Resources” and “Tribal Relations” sections. In response to this comment, the declaration is now listed in the plan, appendix E.

Concern Statement: The Forest Service should consider using Southern Arizona Climbing Coalition as an ombudsman instead of creating a permit and reservation system. (8.10)

Response: The plan is not going to create a permit and reservation system; however, the plan does contain language recommending the creation of a permitting system, should it be needed. This language is found in the “Recreation” section of the plan, management approaches. Any permit and reservation system that would be established would be subject to analysis under the National Environmental Policy Act.

Concern Statement: The Forest Service should coordinate with Pima County and other stakeholders on mineral withdrawals to comply with the existing Memorandum of Understanding. (8.11)

Response: We intend to continue coordinating with Pima County on all issues of common interest, in accordance with our existing memorandum of understanding. Mineral withdrawal actions are not a forest plan decision. However, the Forest Service may consider an administrative mineral withdrawal as outlined in Forest Service Manual 2760. Generally, a withdrawal is a management tool for withholding an area of National Forest System land from settlement, sale, location, or entry under some or all of the general land laws, including the mining and mineral leasing law, for the purposes of limiting activities under those laws to maintain other public values in the area, or reserving the area for a particular public purpose or program. These programs and purposes may include quality of scientific, scenic, historical, ecological, environmental, air, water resource, archaeological values, or other special purposes. Before recommending an administrative withdrawal for a certain area, the Forest Service must comply with the requirements under 43 CFR 2310.1-2 for consideration of alternative protection opportunities such as a right-of-way under section 507 of the regulation (43 U.S.C. 1767) or a cooperative agreement under sections 302(b) (43 U.S.C. 1732(b)) and 307(b) (43 U.S.C. 1737(b)) of the regulation, or other protection methods. These requirements are restated in the forest plan as guidelines under chapter 2 in the "Land Ownership Adjustments and Boundary Management" section.

Concern Statement: The Forest Service should coordinate with the climbing community: to develop an access plan for climbing areas that is compatible with the revised forest plan; to make use of their GPS and mapping skills; to maintain and define use standards; because they are good stewards of the forest; to help achieve desired conditions and implement the regulations in the plan. (8.12)

Response: We agree, and we are working to improve communication and collaboration with the climbing community. We addressed rock climbing in the "General Description," "Desired Conditions," "Guidelines," and "Management Approaches" sections in several areas of the forest plan. Rock climbing language can be found in chapter 2 of the forest plan in the "Biophysical Features" and "Recreation" sections. In addition, rock climbing in specific locations is addressed in chapter 4 in the Douglas, Nogales, and Santa Catalina Ranger District geographic areas. The forest plan directly addresses collaboration with the climbing community in the "Management Approach" found in the "Biophysical Features" section of chapter 2.

Concern Statement: The Forest Service should improve their collaboration with the White Mountain Apache Tribe to ensure that commitments are met. (8.13)

Response: The importance of cooperating with tribes and incorporating their perspectives, concerns, and traditional knowledge into management decisions are listed and discussed in chapter 2, "Tribal Relations," management approaches section. They include working with the White Mountain Apache Tribe and taking its best management practices into account.

Concern Statement: The Forest Service should work with motorized user groups to encourage safe, responsible off-highway vehicle use and improve public outreach and education to assist in trail building and maintenance. (8.14)

Response: We agree and will continue to work with motorized user groups.

Concern Statement: The Forest Service should collaborate with the climbing community on service projects; to preserve the environment, reduce erosion, and improve access; to address cliff management and seasonal closures; and to provide stewardship education stewardship and help with land management projects. (8.15)

Response: We agree. Rock climbing is addressed in the "General Description," "Desired Conditions," "Guidelines," and "Management Approaches" in several sections of the forest plan. Rock climbing language can be found in chapter 2 of the forest plan within the "Biophysical Features" and "Recreation" sections. In addition, rock climbing in specific locations is addressed in chapter 4 within the Douglas, Nogales, and Santa Catalina Ranger District geographic areas. The forest plan addresses collaboration with the climbing community in the "Management Approach" found in the "Biophysical Features" section of chapter 2.

Concern Statement: The Forest Service should coordinate with adjacent landowners: to improve access to wilderness trailheads to help care for the land and manage resources; and to conserve the Galiuro landscape. (8.17)

Response: We agree that we should continue to coordinate with adjacent landowners in all areas of the Coronado National Forest. Management approaches in the "Recreation" section of the plan include:

> "Establishing an ongoing program and long-term partnerships to help the Forest Service maintain trails."

In the "Land Ownership and Boundary Management" section there are desired conditions that emphasize acquiring rights-of-way easements to maintain the integrity of resources and improve public access to Coronado National Forest lands. Management approaches in this section include working with landowners to preserve open space; and acquiring lands of other ownership that resolve public access issues, contain vital habitat, are water oriented, or provide public recreation opportunities.

Concern Statement: The Forest Service should coordinate with the Arizona Game and Fish Department and the New Mexico Department of Game and Fish to address state trust resources. (8.18)

Response: The Forest coordinates with both Arizona Game and Fish Department and the New Mexico Department of Game and Fish. Appendix B of the environmental impact statement summarizes the coordination with other planning efforts including with those agencies.

Concern Statement: The Forest Service should identify Pima County as a partner for wildlife habitat, watershed, and fire management activities to further the goal of increasing collaboration. (8.19)

Response: Appendix B of the environmental impact statement summarizes the coordination with other planning efforts including Pima County. Additionally, the Pima County Sonoran Desert Conservation Plan is cited as a source document for the forest plan. We also collaborate with the Cienega Corridor Conservation Council and the Cienega Watershed Partnership, which include representation from Pima County. The forest plan encourages coordination with counties, and county comprehensive plans can be used as a source of information on the history of land use in the region, the patterns of development, desired conditions, and current county land use policies

Concern Statement: The Forest Service should acknowledge that permittees are stakeholders and address their needs in the plan. (8.21)

Response: We agree permittees are important stakeholders. The forest plan supports continuation of livestock production to provide social and ecological benefits. The "Range Management" section of the forest plan contains plan components and management approaches, many of which address the needs of livestock grazing permittees.

Concern Statement: The Forest Service should clarify the notification requirements to ensure that required consultation with Tribal governments will occur. (8.22)

Response: The Coronado National Forest follows law, policy, guidance, and directives on communication and notification to tribes. Consultation with tribes and the importance of incorporating their perspectives, concerns, and traditional knowledge into management decisions are listed discussed in chapter 2, "Tribal Relations," management approaches section.

Concern Statement: The Forest Service should provide education and outreach to all user groups to reduce erosion impact from trails. (8.23)

Response: The forest plan supports education and outreach to all groups to reduce impacts from trails. See chapter 2, "Recreation" for more information.

Concern Statement: The Forest Service should collaborate with the mining industry on the plan. (8.24)

Response: We agree we should continue to collaborate with the mining industry on the plan and other minerals management activities. We have added the following management approach to the "Minerals" section of the plan to emphasize that intention: "Coordinate with operators, permittees, other agencies, and stakeholders during the environmental review of proposed mineral operations."

Concern Statement: The Forest Service should consult with Native American Tribes. (8.26)

Response: Throughout the planning process, we have reached out to tribes and offered opportunities to consult on the forest plan. The importance of cooperating with tribes and incorporating their perspectives, concerns, and traditional knowledge into management decisions are listed discussed in forest plan chapter 2, "Tribal Relations," management approaches section, and in forest plan appendix B, "Proposed and Probable Management Practices."

Concern Statement: The Forest Service should include the climbing community in cliff management projects and seasonal raptor and bighorn closures. (8.28)

Response: The forest plan contains management approaches in the "Biophysical Features" section that emphasizes engaging caving and climbing organizations in cliff management activities. The forest plan does not address closure orders for bighorn sheep and seasonal raptor. These items are addressed on a case-by-case basis on individual units and not at the forest level. We agree recreation groups and other public stakeholders should be included in this decision-making process, and it should be addressed based on the circumstances for each district.

Concern Statement: The Forest Service should collaborate with the climbing community to cooperatively manage climbing as an unpermitted, low-impact recreation activity. (14.03, 14.08, 14.09, 14.11)

Response: Rock climbing is addressed in several areas of the forest plan in the "General Description," "Desired Conditions," "Guidelines," and "Management Approaches" sections. Rock climbing language can be found in chapter 2 of the forest plan in the "Biophysical Features" and "Recreation" sections. In addition, rock climbing in specific locations is addressed in chapter 4 in the Douglas, Nogales, and Santa Catalina Ranger District geographic areas. The forest plan addresses collaboration with the climbing community in the management approach found in the "Biophysical Features" section of chapter 2.

Public Involvement (44)

Concern Statement: The Forest Service should clarify why comment letters were not cleared for posting quickly and why some comments have been removed. (44.02, 44.03)

The Forest Service should clarify what is considered proprietary or sensitive resource information as it relates to letters being unavailable in the public reading room. (44.04)

Response: Comment letters were posted to the following website: https://cara.ecosystem-management.org/Public/ReadingRoom?project=31147. We monitored comments and letters that contained sensitive information and did not make those available via the webpage. Letters become unavailable in the public reading room when they contain information pertaining to sensitive resource information such as nesting locations, dens, burial sites, or gravesites. Further, letters containing tribal-related topics pertaining to Native Americans, sovereignty, or Indians are also flagged as potentially sensitive information and not available for public viewing. Letters in these categories and letters that contain threats or offensive language remain unavailable in the public reading room until they are reviewed by agency officials and manually released.

Concern Statement: The Forest Service should provide easy access to the public reading room for all documents and those received via email. (44.01, 44.09)

Response: Public comments are available on the internet at https://cara.ecosystem-management.org/Public/ReadingRoom?project=31147.

Concern Statement: The Forest Service should provide an automated response to the sender that email comments were received. (44.06)

Response: The Forest did not send an automated response upon receipt of a letter. An automated response for all comments and letters is beyond the requirements for the acceptance of public comment.

Outreach/Education (38)

Concern Statement: The Forest Service should improve conservation education for canyon users, Forest Service staff, scientists, and students in areas such as Portal and Cave Creek. (38.01, 38.05)

Response: Although specific conservation education programs are not a plan-level decision, the forest plan provides guidance that encourages conservation education. Specifically, chapter 2, the "Recreation" section includes the following desired condition statement:

> "Interpretation and visitor education programs help visitors understand how to reduce their impacts on ecosystems, and visitors actively help support the Coronado National Forest's efforts to protect natural resources and wilderness values."

This section also includes the following management approach:

> "Developing interpretive facilities and conservation education programs to provide opportunities for visitors and the increasingly urban population in southeastern Arizona to learn about and appreciate nature and wild places."

Concern Statement: The Forest Service should allow the Southwestern Research Station to continue with the current permitting system to allow research and study to continue under the current system. (38.03)

Response: The permitting system for the Southwestern Research Station special use permit is not a plan-level decision. However, we recognize the research station as an important partner, especially as a source of science that can be used to inform management. A management approach emphasizing the importance of collaborating with the research station has been added to the forest plan in chapter 4, "Geographic Areas," "Chiricahua Ecosystem Management Area."

Concern Statement: The Forest Service should continue to allow access to the national forest in support of outreach and education, balance the educational and recreational mission of wilderness with natural resource protection, and add educational signage to the national forest to improve education and highlight the unique values of the forest. (38.02, 38.04)

Response: Education, balancing wilderness with natural resource protection, and interpretation and visitor education programs are found in chapter 2 of the plan in the "Recreation" section. Interpretation and visitor education programs help visitors understand how to reduce their impacts on ecosystems, and visitors actively help support the Coronado National Forest's efforts to protect natural resources and wilderness values.

Although specific conservation education programs are not a plan-level decision, the forest plan provides guidance that encourages conservation education. Specifically, chapter 2, the "Recreation" section includes the following desired condition statement:

> "Interpretation and visitor education programs help visitors understand how to reduce their impacts on ecosystems, and visitors actively help support the Coronado National Forest's efforts to protect natural resources and wilderness values."

This section also includes the following management approach:

> "Developing interpretive facilities and conservation education programs to provide opportunities for visitors and the increasingly urban population in southeastern Arizona to learn about and appreciate nature and wild places."

Concern Statement: The Forest Service should improve their community outreach because communication with the local community requires greater effort to improve the community's involvement and increase public meeting attendance. (39.06)

Response: We recognize the need to improve community outreach. As described in chapter 1, "Summary of the Analysis of the Management Situation," improving community outreach was identified early on in the plan revision process as one of the five basic topics around which the plan was developed. Topic 5, "Communities, Collaboration, and Partnerships" is analyzed in the environmental impact statement, and a comparison of how well each alternative meets this need for change is found in chapters 2 and 3 of the document.

Concern Statement: The Forest Service should lead a class on indoor and outdoor climbing. (38.07)

Response: This comment is outside the scope of the plan. Classes on indoor and outdoor climbing are not within the jurisdiction of the Forest Service. They are offered by groups such as Outdoor Adventures and the Southern Arizona Climbers Coalition.

Desired Conditions and Objectives (12, 36)

Concern Statement: The Forest Service should eliminate social and economic attributes from desired conditions because desired conditions should only include landscape conditions. (12.01)

Response: Focusing on social and economic attributes helps create ties to the communities we serve; therefore, it is appropriate to include them in desired conditions. Part of the requirements of the National Forest Management Act is to identify and analyze the social and economic benefits attributed by the Coronado to the local community. Identifying the social and economic benefit is also a way to connect the agency's motto, "caring for the land and serving the people", with the management actions that occur on the ground.

Concern Statement: The Forest Service should amend the desired conditions to address the importance of spring ecosystems to address ecosystem resilience. (12.03)

Response: We agree with your comment. We have added springs ecosystems to the desired condition statement for natural water sources.

Concern Statement: The Forest Service should revise the desired conditions for wilderness character to recognize that the untrammeled or wild nature is key to wilderness character. (12.04)

Response: The forest plan contains desired conditions and guidelines that address the untrammeled or wild nature of wilderness character. They include the following language:

> **Desired Conditions:** "The ecological systems within wilderness areas across the Coronado National Forest vary naturally over time and space. Wilderness areas provide a wide variety of opportunities for exploration, solitude, natural risk, challenge, and primitive and unconfined recreation. Wild landscapes harbor the Coronado's richest concentration of quiet places, with the sights and sounds of humankind substantially unnoticeable. Developments (e.g., fences, structures, and water containment features) are rare; those that exist offer visitors a glimpse of past cultures and traditional land uses."
>
> **Guidelines:** 1. Wilderness character should be maintained or improved. This includes untrammeled, natural, and undeveloped qualities, as well as opportunities for solitude or primitive and unconfined recreation.

Concern Statement: The Forest Service should include a structured process for choosing among objectives that would provide justification as to why a particular objective was chosen. Additionally, the Forest Service should modify objectives that contribute to achieving desired conditions. (36.01, 36.02)

Response: Objectives were based on public input and developed by resource experts in each specialty area to achieve or move toward desired conditions in the most effective way. Objectives would be met by implementing site-specific projects, and they are not intended to be hierarchical. Additionally, there is acknowledgement in the introduction to chapter 1 of the forest plan stating the objectives were developed and are strongly influenced by recent trends, past experiences and

anticipated staffing levels, and short-term budgets. The "Forest Plan Content" section of the plan further describes objectives.

Concern Statement: The following desired conditions should be added to this section to address the importance of springs ecosystems. Springs have the necessary soil, water, and vegetation attributes to be healthy and functioning. Water flow patterns, groundwater recharge rates, and geochemistry are similar to historic levels. The location and status of springs and water resources is known, organized, and available. Springs or other natural waters remain in a natural undeveloped state and are not modified for livestock and/or human consumption. (36.03)

Response: We agree springs are an important resource. The desired conditions for springs have been clarified in the definition of riparian areas in chapter 2 in the "Natural Water Sources" section.

Standards and Guidelines (level of discretion) (56)

Concern Statement: The Forest Service should analyze the effects of abandoning standards and guidelines for management of riparian areas to comply with the National Forest Management Act. (56.01)

Response: The plan contributes to ecological, social, and economic sustainability focused on meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The National Forest Management Act (section 6(e)(1)) states that in revising plans, "provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use, Sustained-Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness ..." Changes in standards and guidelines are analyzed in the environmental impact statement. Since the no-action alternative is the current forest plan, any changes to the current plan standards and guidelines (deletions, modifications, additions) are reflected in the action alternatives, with the effects of the differences in alternatives (including the no action-current plan versus the action alternatives) being analyzed and documented in chapter 3 of the environmental impact statement.

Standards and guidelines related to the management of riparian areas have not been abandoned, and can be found in chapter 2 of the "Forestwide Management" section under "Riparian Areas" in the revised forest plan.

Concern Statement: The Forest Service should incorporate standards and guidelines for water quality monitoring and pollution control to ensure that water quality will be maintained at a level needed to support aquatic ecosystems, recreational uses, and scenic values; to address water quality issues and comply with the National Forest Management Act; and for both perennial and seasonal watercourses. (56.02)

Response: This concern is addressed throughout the "Watershed" section of the plan, including guideline 1 as water quality is one of the items assessed through the watershed condition framework and classification system. Water quality is also addressed in the desired conditions, guidelines and management approaches of "riparian areas," "natural water sources" and "wetlands". We cooperate with Arizona Department of Environmental Quality and New Mexico Environment Department to meet defined water quality standards.

Concern Statement: The Forest Service should add guidelines to protect natural waters. (56.03)

Response: The forest plan has five guidelines that protect and enhance natural water sources. The guidelines include the following:

- Projects in upland habitats adjacent to streams should be designed to minimize input of sediment to streams.
- Water quality, quantity, and aquatic habitat at natural springs and seeps should be protected or enhanced.
- Fuel buildup should be reduced around natural water sources to protect them from uncharacteristic fire effects.
- Management activities should not impair soil moisture recharge at outflows of natural water sources.
- Projects affecting perennial streams should be designed and constructed to allow for the natural instream movement of native fish, except where barriers are necessary to preclude the movement of nonnative species.

Concern Statement: The Forest Service should clarify the enforcement mechanism for guidelines as they relate to mining and the Rosemont Mine. (56.04)

Response: The description of "guidelines" in the forest plan can be found in chapter 1, in the "Content" section. Guidelines must be followed, but they may be modified somewhat for a specific project if the intent of the guideline is followed and the deviation is addressed in a decision document with supporting rationale. A minerals project may be reasonably modified, if necessary, to be consistent with a forest plan guideline, which becomes part of the approved permit including the compliance enforcement authorities associated with the permit. When deviation from a guideline does not meet the original intent, a plan amendment is required. Requirements for a plan amendment are found in Forest Service Manual 1926.5.

The Rosemont project has undergone a separate project-specific environmental analysis, which is consistent with the 1986 plan, the forest plan in effect at the time of the Rosemont project decision. Please see http://www.rosemonteis.us. In that analysis, an evaluation of the proposed Rosemont project's consistency with the 1986 forest plan is disclosed, including any required amendments.

Concern Statement: The Forest Service should include standards and guidelines for riparian areas to ensure that riparian areas are adequately protected from the impacts of grazing and other activities to comply with National Forest Management Act and the Endangered Species Act. (56.05)

Response: The forest plan includes guidelines for protecting riparian areas in chapter 2, "Forestwide Management" and in the "Riparian Area," "Range Management," and "Motorized Transportation System" sections. The forest plan complies with the National Forest Management Act and the Endangered Species Act.

Concern Statement: The Forest Service should reconsider replacing the standards and guidelines of the existing plan with desired conditions and objectives because the proposed standards are limited in scope and effect and are not certain to contribute to species viability: to comply with the National Forest Management Act; because desired conditions do not constitute a plan; and to provide for sanctions for noncompliance. (56.06)

Response: The forest plan contains standards and guidelines in addition to desired conditions and objectives. Chapter 3 of the final environmental impact statement contains "Species Diversity and Viability" sections (under Environmental Consequences). The plan includes "plan decisions." Once approved, any substantive changes to a plan decision will require a plan amendment. Forest plan decisions include goals (desired conditions), objectives, standards, and guidelines. Desired conditions set forth the desired social, economic, and ecological attributes of the Coronado National Forest. They attempt to paint a picture of what we (the public and Forest Service) desire the forests to look like and the goods and services we desire them to provide. Desired conditions are normally expressed in broad, general terms and are timeless in that there is no specific date by which they are to be completed. Desired conditions may only be achievable over a long timeframe (in some cases, several hundred years). In some cases, a desired condition matches the current condition, and the goal is to maintain it. Desired conditions are aspirations and are not commitments or final decisions to approve projects.

Objectives are concise, time-specific statements of measurable planned results that make progress toward or maintain desired conditions. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving desired conditions. The objectives represent just some of the expected outcomes or actions required to accomplish movement toward desired conditions. Not every action or objective the Coronado National Forest may initiate is identified in the plan, just the primary ones.

Standards are constraints upon project and activity decision making. A standard is an absolute requirement to be met in the design of projects and activities. A project or activity is consistent with a standard when its design is in accord with the explicit provisions of the standard; variance from a standard is not allowed except by plan amendment.

Guidelines are components with which a project or activity must be consistent, in either of two ways:

- The project or activity is designed exactly in accord with the guideline; or
- A project or activity design varies from the exact words of the guideline, but is as effective in meeting the purpose of the guideline to contribute to the maintenance or attainment of the relevant desired conditions and objectives.

Guidelines must be followed, but they may be modified somewhat for a specific project if the intent of the guideline is followed and the deviation is addressed in a decision document with supporting rationale. When deviation from a guideline does not meet the original intent, a plan amendment is required.

The purpose of desired conditions is to set a plan of action with long-term goals to achieve on a Coronado. Although the desired condition may not be met within the planning period, it is still established as a goal to help set parameter for the management approach ad implementation. Objectives set up precise steps for resource management. Standards and guideline ensure we are complying with the National Forest Management Act. Standards set constraints on allowable actions for the resource, and guidelines require projects and activities to be consistent with the forest plan.

Concern Statement: The Forest Service should include more standards in the plan because they are more binding than guidelines and goals; because priorities can change with changes in Forest Service management; and to protect natural waters. (56.07)

Response: The forest plan contains components for natural waters, including desired conditions, objectives, and guidelines.

Objectives are concise, time-specific statements of measurable planned results that make progress toward or maintain desired conditions. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving desired conditions. The objectives represent just some of the expected outcomes or actions required to accomplish movement toward desired conditions. Not every action or objective the Coronado National Forest may initiate is identified in the plan, just the primary ones.

Standards are constraints on project and activity decision making. A standard is an absolute requirement to be met in the design of projects and activities. A project or activity is consistent with a standard when its design is in accord with the explicit provisions of the standard; variance from a standard is not allowed except by plan amendment.

Guidelines are components with which a project or activity must be consistent, in either of two ways:

- The project or activity is designed exactly in accord with the guideline; or
- A project or activity design varies from the exact words of the guideline, but is as effective in meeting the purpose of the guideline to contribute to the maintenance or attainment of the relevant desired conditions and objectives.

Guidelines must be followed, but they may be modified somewhat for a specific project if the intent of the guideline is followed and the deviation is addressed in a decision document with supporting rationale.

All of these plan components are binding. When projects activities do not meet the forest plan guidelines, the project has to be either dropped or modified to meet the plan components or the plan must be amended to ensure all plan components are met, based on the intent of the guideline that was developed. The plan components can be found in chapter 2, in the "Forestwide Management," "Natural Waters" sections of the forest plan.

Concern Statement: The Forest Service should include standards and guidelines related to Total Maximum Daily Loads (TMDLs) to ensure that the plan will help improve impaired waterbodies. (56.08)

Response: In the forest plan, chapter 2, the forestwide guidelines and management approaches for natural water sources provide guidance to help meet total daily maximum loads. In the environmental impact statement, chapter 3, the "Water Resources – Affected Environment" and "Water Resources – Environmental Consequences" sections provide total daily maximum load analysis.

Concern Statement: The Forest Service should include standards and guidelines to limit impacts on watershed health: to address impacts from recreation, mining, timber harvesting, water diversion, road construction and maintenance, and grazing; and to prohibit road construction, motorized recreation, mining, logging, and grazing within at-risk watershed areas. (56.09)

Response: The forest plan contains plan components, including standards and guidelines, that address watershed health, See the "Forestwide Management" section in chapter 2 of the forest

plan. Many of the standards and guidelines that address watershed health and protection measures related to recreation, mining, timber harvestings, road construction, and grazing are contained in sections outside of the watershed guidelines. The "Watershed" section under "Forestwide Management" has a list of general standards and guidelines that apply to the watershed health and function; however, specific guidelines to address these resources are located in subsequent resource areas.

Concern Statement: The Forest Service should include standards for wildlife connectivity to provide accountability and strategy to reach the desired conditions that require coordination with other land management agencies, private landowners, land developers, counties, transportation authorities, land trusts, conservation organizations, Fort Huachuca, the Western Regional Partnership, the Arizona Wildlife Linkages Workgroup, and public wildlife agencies to ensure biological connectivity and secure habitat linkages between forest units. (56.10)

Response: The forest plan contains management approaches that address coordination with county, municipal, State, and Federal agencies; adjacent landowners; and nongovernmental organizations to ensure habitat connectivity between sky islands is preserved, restored, and enhanced for wildlife using corridors between ecosystem management areas of the Coronado. Forest plan components for protecting animals and rare plants are also found in various other sections of the forest plan in chapters 2, 3, and 4.

Concern Statement: The Forest Service should retain the standards for maintaining visual quality/scenic integrity and road density. (56.11)

Response: The Coronado National Forest is implementing scenery management. The forest plan contains desired conditions, guidelines and management approaches to maintain scenery. The plan provides guidance for managing road density by setting desired conditions for the various land use zones. In the Roaded Backcountry Land Use zone, the desired road density standard is inferred by desired conditions and a guideline that limit the level and type of development to protect the natural character inherent in this zone.

Concern Statement: The Forest Service should provide standards and guidelines for surface water and groundwater resources because mining activities can negatively impact groundwater resources. (56.12)

Response: Mining activities on National Forest System land are regulated by a variety of government agencies depending on the law, regulation, and policy or delegated authority. We do not have jurisdiction over the surface water and groundwater quality and therefore has no authority to set standards and guidelines for these resources. We do identify management approaches. The Arizona Department of Water Resources has jurisdiction over surface water and groundwater quantity resources in the state. The Arizona Department of Environmental Quality has jurisdiction over surface water and groundwater quality in the state. We work with both agencies to protect water quantity (water rights and instream flows) and water quality (Clean Water Act requirements). Since the State has jurisdiction on water quantity and quality, we defer to State standards and guidelines. Any mining project would need to obtain permits from the State agencies in order to operate on Federal land.

Monitoring (33)

Concern Statement: The Forest Service should expand and support ecological monitoring to address the threats from climate change, increased usage rates, and distributions of invasive species to avoid monitoring results that are biased and narrow. (33)

Response: The 2012 Planning Rule requires that forest plans developed under prior planning regulations, including the 1982 Planning Rule, follow the updated 2012 rule guidance on the required content in the monitoring plan. The Coronado developed its plan monitoring program consistent with the requirements of the 1982 rule but also with an eye towards meeting the 2012 rule monitoring requirements. See "Chapter 6. Monitoring and Evaluation" for a list of monitoring categories related to climate change and invasive species. Possible monitoring methods and data sources are shown in chapter 6, but these can be amended as new methodology and technology becomes available. Also see "Chapter 6. Monitoring and Evaluation" for changes between the draft and final plans.

Concern Statement: The Forest Service should clarify whether monitoring is required.(33.1)

Response: As stated in Chapter 6, "Monitoring and Evaluation", monitoring and evaluation are separate and sequential activities required by National Forest Management Act regulations to determine how well the forest plan is working. Monitoring and evaluation are also required by the 1982 Planning Rule to consider the effects of national forest management on land, resources, and communities adjacent to or near the national forest undergoing forest plan revision and the effects on national forest management of activities on nearby lands managed by other Federal or other government agencies or under the jurisdiction of local governments.

Proposed Action, Decision (41)

Concern Statement: The Forest Service should revise the EIS to include an analysis of the socio-economic impacts to owners of unpatented mining claims. (41)

Response: The forest plan does not contradict or impair the rights inherent to holders of unpatented mining claims, which include access to, and ownership of, locatable minerals when a mineral discovery has been made. The plan is in accordance with the General Mining Law of 1872, as amended, and it also is accordance with subsequent laws that regulate the management of surface resources. As such, we are required under the National Environmental Policy Act (NEPA) to evaluate, disclose, and mitigate impacts to other natural resources and to socioeconomic resources; language in the revised forest plan follows this direction.

Concern Statement: The Forest Service should resolve inconsistencies between the EIS and the LRMP including inconsistent use of terminology and definitions, such as characterization of species and the definition of Wild Backcountry. (41)

Response: The plan and final environmental impact statement have been reviewed and revised to resolve inconsistencies between the documents as well as make other changes.

Concern Statement: The Forest Service should modify the table showing suitable uses to include activities in addition to the extractive uses. (41)

Response: Table 14 provides information on selected activities that may be allowed on the Coronado National Forest and is not inclusive of all activities that may be considered over the

planning period. Existing special uses may be reauthorized where they are not suitable on a case-by-case basis, except for uses that are not suitable forestwide.

Concern Statement: The Forest Service should acknowledge that suitability must be determined in the plan and may not be delegated to the discretion of the responsible official. (41.01)

Response: Responsible officials have the discretion to determine the scope and design in their project and activity decision making, within the constraints that they are consistent with the forest plan, applicable law, regulations, and policy.

As discussed in the forest plan "Decisions" section of chapter 1, suitability is one of six plan decisions. Suitability is described as the appropriateness of applying certain resource management practices (uses) to a particular area of land. A unit of land may be suitable for a variety of individual or combined uses. Except for projects with a purpose of timber production, a project or activity can be consistent with plan suitability determinations in either of two ways: (1) a use for which the area is specifically identified in the plan as suitable, or (2) not a use for which the area is specifically identified in the plan as suitable, but is nonetheless appropriate for that location.

Concern Statement: The Forest Service should consider an aquatic conservation strategy to protect riparian resources and maintain species viability. (41.03)

Response: Chapter 2 of the forest plan includes elements in the desired condition that are aquatic related: wetlands, riparian areas, natural water sources, constructed water sources. The plan includes many components designed to enhance or restore native, warm water fish habitat. Examples include NWS-O-1 and NWS-O-2, which are objectives designed to acquire water rights on areas where fish occur as well as reconstruct springs to support native wildlife including fish. Guideline ISM-G-1 will result in the removal of nonnative invasive plant and animal species where fish and other special status aquatic species occur. The guidelines NWS-G-2, NWS-G-3, NWS-G-4, and NWS-G-5 allow for natural instream movement; reducing fuel build up; and protecting water quality, quantity, and habitat features at natural springs and seeps prioritized in habitat where fish occur.

Concern Statement: The Forest Service should ensure the plan is consistent with other planning documents and improve the integration of the plan with local plans in order to combine preservation resources, efforts, and to meet shared goals. Including the Aravaipa Draft Ecosystem Management Plan, City of Sierra Vista planning documents, Cooperative Management Area agreement, Cochise County and City of Sierra Vista land use plans, and the Sonoran Desert Conservation Plan. (41.04, 41.06)

Response: The plan is consistent with other planning documents. Appendix B of the environmental impact statement discusses coordination with other public planning efforts in which we reviewed the planning and land use policies of other Federal agencies, State and local governments, and Indian tribes. This appendix includes consistencies, potential discrepancies, and recommendations for resolving inconsistencies among the other public plans. No major conflicts were identified. The main focus of the plan is ecosystem restoration and resilience which requires and "all-lands approach" and involves working with adjacent landowners and stakeholders and working together across boundaries to decide on common goals for the landscapes.

Concern Statement: The Forest Service should clarify the priorities in the plan to identify which goals will be given priority under circumstances of limited funding, and to identify which uses are most valuable and valued by the public. (41.09)

Response: We developed realistic objectives, standards, and guidelines that can be implemented with anticipated future budgets (expected to be similar to current budgets). Chapter 1 of the plan acknowledges that objectives to achieve desired conditions are strongly influenced by recent trends, past experiences, and anticipated staffing levels and short-term budgets. Chapter 6 of the plan acknowledges the uncertainties related to monitoring and evaluation relative to funding and prioritization as required by the National Forest Management Act:

> "Budgetary constraints may affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Coronado National Forest's ability to perform all monitoring tasks, then those items specifically required by law are given the highest priority."

Concern Statement: The Forest Service should ensure the plan meets legal requirements including the 1982 Planning Rule or the 2012 Planning Rule, National Forest Management Act, and NEPA. (41.10, 41.23)

Response: We followed the requirements outlined in the National Environmental Policy Act, National Forest Management Act, and 1982 planning rule regulations (as allowed by the transition language in the 2012 Planning rule at 36 CFR 219.17(b)(3)) to develop the forest plan and environmental impact statement.

Concern Statement: The Forest Service should revise the forest plan to ensure the plan will result in achieving the desired conditions and ensure the plan has clear achievable objectives, expected outcomes, indicators of success, funding plans, and contingency plans. (41.12B)

Response: We developed realistic objectives, standards, and guidelines that can be implemented with anticipated future budgets (expected to be similar to current budgets). Chapter 1 of the plan acknowledges that objectives to achieve desired conditions are strongly influenced by recent trends, past experiences, and anticipated staffing levels and short term budgets. Desired conditions may be achievable over a long period or may be an existing condition on the Coronado National Forest. Desired conditions are described in chapter 1 of the forest plan.

The goal of the Coronado National Forest is to achieve the desired conditions through the plan components outlined in the proposed plan. Chapter 6 of the plan acknowledges the uncertainties related to monitoring and evaluation relative to funding and prioritization as required by the National Forest Management Act:

> "Budgetary constraints may affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Coronado National Forest's ability to perform all monitoring tasks, then those items specifically required by law are given the highest priority."

For example, according to the plan in chapter 2, "Forestwide Management" section "Vegetative Communities," Madrean pine-oak woodlands:

> In Madrean pine-oak woodland communities, common animal species include the acorn woodpecker. The acorn woodpecker is a management indicator species for this vegetation community. Therefore monitoring and evaluation for Madrean pine-oak woodlands is based on the population and distribution of the acorn woodpecker. The following table outlines the monitoring and evaluation strategy for Madrean pine-oak woodlands which is directly linked to the objective of this vegetative community to treat at least 25,000 acres of Madrean pine-oak woodlands using wildland fire (planned and unplanned ignitions), prescribed cutting, and mastication every10 years.

Monitoring and Evaluation for Madrean pine-oak woodland communities

Resource Area	Monitoring Question	Possible Monitoring Methods and Data Sources	Frequency of Monitoring (Years)	Frequency of Evaluation (Years)	Data Precision and Accuracy
Madrean Pine-Oak Woodland	The acorn woodpecker is identified as a management indicator species in the Madrean pine-oak woodland. How have populations and distribution of acorn woodpeckers changed?	Population: numbers; distribution: via habitat.	5	5	B

Concern Statement: The Forest Service should revise the forest plan to emphasize managing the forest for ecosystem health rather than mining and reduce the emphasis on consumptive uses. (41.12C)

Response: We do not give greater weight to one resource interest over another. The forest plan provides for the full scope of natural resource issues impacting the Coronado. Most of the guidance for mining is governed by law, regulation, and policy, which does not need to be repeated within the forest plan. Future projects and activities, of any kind, must be consistent with the forest plan and various laws, agency policy, and direction to manage vegetation and natural resources for multiple uses, all of which provide resource outputs for human society, either directly or indirectly.

The forest plan emphasizes ecosystem health in the desired conditions and plan components for vegetation communities in chapter 2. In particular, ecosystem restoration and resiliency is one of five key components analyzed in the plan which provides critical understanding of the biodiversity in ecosystems (including forests).

Concern Statement: The Forest Service should ensure the plan complies with multiple use requirements, conforms to mandatory requirements, and ensure that supporting data is accurate with claims substantiated by good science. (41.12D)

Response: The plan contributes to ecological, social, and economic sustainability focused on meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The plan is in compliance with the legal requirements of the National Forest Management Act and Multiple Use–Sustained Yield Act, which requires forests to be managed using multiple-use, sustained yield principles. The National Forest Management Act (section 6(e)(1)) states that in revising plans,

> "provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use, Sustained-Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness…"

The Multiple Use-Sustained-Yield Act (MUSYA) of 1960 (section 1) states that,

> "the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

Development of the revised forest plan and plan components was based on the best available science and information; citations are provided throughout the environmental impact statement and revised plan. Consistent with the National Environmental Policy Act and Council on Environmental Quality regulations, we used a systematic, interdisciplinary approach in the planning and decision-making process, ensuring the integrated use of natural and social science and the environmental design arts. In particular, the revised plan responds directly to the purpose and need, including five identified needs for change, by providing new and updated direction based on the best available science. We revised or added plan components to reflect current scientific literature and information. For example, related to the "ecosystem restoration and resiliency" need for change, the revised forest plan prescribes new and updated direction regarding habitat conservation and restoration, species conservation, management of vegetative fuels, management of wildfire and ecological responses to it, management of invasive species, and dealing with the effects of climate change.

Concern Statement: The Forest Service should reorganize the plan for greater clarity by removing material from the plan that should be in the environmental impact statement and include general information on regulations in an appendix. (41.12E)

Response: We followed the requirements outlined in the National Environmental Policy Act, National Forest Management Act, and 1982 planning rule regulations to develop the draft forest plan and draft environmental impact statement. The planning team determined the current organization of the plan to be the most efficient within these requirements.

Concern Statement: The Forest Service should address potential solar and wind energy development because these uses are incompatible with the scenic integrity and recreational values of the Forest. (41.13)

Response: Table 18 in chapter 5 of the plan identifies suitable and nonsuitable areas for other energy (developments), which includes wind turbines and solar panels. Development of wind and solar energy could only occur within identified suitable areas and would be consistent with the guidelines identified for scenery and recreation. Additionally, the Forest Service has agency-specific guidance in law, regulation, and policies established at the national level when considering new energy projects including compliance with the National Environmental Policy Act.

Concern Statement: The Forest Service should enhance the proposed action to address modern principles of resource management, the special qualities of highly biodiverse forests, and climate change as an important stressor of forests. (41.14)

Response: The proposed action addresses resource management through identified standards, guidelines, objectives, and management approaches for resource management categorically broken down by ecosystem type and management areas. These management approaches were developed using best available science and professional judgments and included public input and collaboration with significant tribal involvement, which helped shape these approaches. The Forest Service believes modern principles of resource management are incorporated directly and indirectly in the plan.

The proposed action and alternatives were developed to address biodiversity and potential changes to the environment attributable to climatic change. The proposed action and alternatives respond to these issues to varying degrees by increasing plant community resilience and

addressing uncertainties associated with climate change impacts to habitat and water availability. The plan protects biodiversity by setting forth desired conditions, objectives, standards, and guidelines to maintain species diversity and species viability across the planning area. Ecosystem restoration and resiliency is one of five key components analyzed in the plan which provides critical understanding of the biodiversity in ecosystems (including forests).

Climate change is addressed indirectly throughout the proposed plan with desired conditions in the form of functional ecosystems and resilient landscapes. Climate change is addressed directly in desired conditions for response to climate change, management approaches, and monitoring plan implementation where appropriate. Appendix A of the forest plan provides a more detailed explanation of climate change patterns and trends in the Southwest and the potential implications to the Coronado National Forest and discusses the strategy the Coronado is using to address climate change. In addition, the “Response to Climate Change” section of chapter 2 discussed desired conditions and management approaches for climate change.

Concern Statement: The Forest Service should ensure that the travel management plan and the land management plan are consistent with one another: as it relates to decommissioning of roads, as it relates to new road construction and improvements, as it relates to consistency with the Forest Service Manual, and as it relates to decision making and conservation-related management recommendations. (41.15)

Response: While the forest plan does not duplicate the Travel Management Rule or the directives related to it, it is consistent with both and is meant to be used along with the directives and the motor vehicle use map. The forest plan provides a framework to guide future changes to the transportation system, which can be found in chapter 2 under the “Motorized Transportation System” section. Potential changes to the Coronado’s transportation system would be evaluated in separate analysis through future project-level decision making such as the implementation of the Travel Management Rule (36 CFR§212). These decisions would be consistent with the National Environmental Policy Act and Forest Service manual and handbook direction and would include analysis and opportunity for public involvement. Site-specific travel management planning will use the framework set by the plan (such as desired conditions, standards, and guidelines) and will consider potential resource impacts, access needs, public input, and alternative views. If undesirable resource conditions resulted from open roads, they could be addressed through site-specific evaluation and analysis.

Concern Statement: The Forest Service should use the word "mountain" instead of "sky island" to reduce use of nontechnical vocabulary. (41.08)

Response: We determined that the existing wording is more concise given that sky islands are defined as isolated mountains surrounded by radically different lowland environments. As such, this has significant implications for natural habitats as demonstrated on the Coronado National Forest. Therefore, no changes were made between the draft and final versions of the revised plan.

Concern Statement: The Forest Service should modify figure 4-101 to include county boundaries. (41.11)

Response: The county boundaries have been included in figures 1 and 2 in the forest plan.

Concern Statement: The Forest Service should have included Management Unit 16 in the draft environmental impact statement because it will cut off the north end of the Santa Rita Mountains

as a viable location for wildlife and the public should be provided an opportunity to comment. (41.05, 29.49)

Response: Including Management Area 16 in the revised plan prior to the Rosemont project decision being made would have been pre-decisional, both to the Rosemont project decision, and to the revised forest plan decision. Projects must be consistent with the Forest Plan in effect at the time the project decision is made, which the Rosemont project with its plan amendment was, as it was consistent with the 1986 forest plan, in effect at the time of the Rosemont project decision. There is no requirement to revisit project decisions made under a previous Forest Plan, when a new revised forest plan goes into effect. That said, the revised plan will be reviewed and potential adjustments may be made via a plan amendment to ensure consistency between the Rosemont project and revised forest plan if any adjustments are felt to be warranted.

Concern Statement: The Forest Service should provide an executive summary that clearly shows the proposed changes in the plan. (41.26)

Response: We determined an executive summary was not necessary and would not substantially differ from chapter 1 of the plan; therefore, no changes were made between the draft and final versions of the revised plan. Appendix H of the final environmental impact statement provides a crosswalk between key direction from the 1986 forest plan and the revised forest plan.

Concern Statement: The Forest Service should proceed with the proposed plan including the suitability, monitoring and evaluation, and climate change sections. The plan takes a proactive, science-based approach to managing the forest and promotes ecosystem restoration and resiliency and preservation of open space. (41.17, 41.21)

Response: Thank you for your comment.

Concern Statement: The Forest Service should provide justification for changing the current forest plan and evaluate the effectiveness of the 1986 plan. This should include identifying successes, failures, and inadequacies associated with desired conditions, objectives, and legal requirements of the 1986 plan. The public should be involved in this process. (41.18, 41.19)

Response: The National Forest Management Act requires forest plans be revised when environmental conditions, social conditions, or both have significantly changed and recommends a revision occur at least every 15 years (Coronado forest plan revision began in 2005). The original plan was used as a building block for the revised plan. Many of the original plan components were retained, some were modified, and some that were not within management control or that were already addressed by law, regulation, or policy were not carried forward. In the draft environmental impact statement, the 1986 plan served as the no action alternative and subsequently was the baseline of comparison for the other alternatives (see tables 6 and 7 of chapter 2) for side by side comparisons. Chapter 3 of the final environmental impact statement provides thorough analysis of the no-action alternative (1986 plan) from the context of the five revision topics: ecosystem restoration and resiliency, visitor experience, access to National Forest System lands, preservation of open space, and communities, collaboration, and partnerships.

Extensive public involvement and collaboration, in addition to tribal consultation, has occurred in the development of the plan. See the “Public Involvement and Collaboration” section in chapter 1 of the environmental impact statement.

Monitoring and evaluation are required by the National Forest Management Act for the revised forest plan to determine how well it is working. Monitoring and evaluation provide ongoing feedback about management effectiveness and keep direction found in the forest plan up to date and relevant by being responsive to changing conditions and issues—including public desires—and to new information, such as research results or outcomes from management activities.

Concern Statement: The Forest Service should include actions to ensure sustainability of multiple uses into the future and support research as a primary use to preserve the resources for future generations. (41.25, 41.25)

Response: The plan contributes to ecological, social, and economic sustainability focused on meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The legal requirements of the National Forest Management Act and Multiple Use-Sustained Yield Act require forests to be managed using multiple use, sustained yield principles. The National Forest Management Act (section 6(e)(1)) states that in revising plans,

> "provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use, Sustained-Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness…"

The Multiple Use-Sustained-Yield Act (MUSYA) of 1960 (section 1) states that,

> "the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

Further, plan direction to maintain or move toward desired conditions (including ecological, social, and economic) are in alignment with the Forest Service mission to "sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations". They will also help us meet the intent of congressional mandates such as the Multiple Use-Sustained Yield Act of 1960 and the Healthy Forests Restoration Act of 2003. Chapters 2 and 3 of the plan discuss multiple use topics, including those listed specifically by the Multiple Use-Sustained Yield Act.

Research is considered a special use and the forest plan incorporates general guidance under the "Special Use" section of chapter 2. In addition, provisions for research exist in specially designated areas including research natural areas, and zoological-botanical areas with specific direction for research in wilderness which can be found in the section "Research in Wilderness" in the "Designated Wilderness Areas" section in chapter 3. It states the desired condition:

> "Wilderness areas provide an ideal outdoor laboratory for studying the natural environment in its most pristine form. Scientific studies allow for discovery of wilderness dependent information. Research contributes to the understanding of complex ecosystem interactions and disturbances, and aids managers in improving wilderness management strategies. Field studies do not detract from wilderness character."

Across the Coronado, there are six research natural areas that are areas "the Forest Service has designated to be permanently protected and maintained in natural condition, so they may serve as experimental research controls and monitoring sites for the particular ecosystem they represent and used for education." Comparison of monitoring data between areas where uses occur and

where they do not can inform discussions about the sustainability of particular uses or the need to make adaptive changes to the use.

Resource and Area Management (49)

Concern Statement: The Forest Service should retain the current special use permitting process and not add additional application or compliance requirements.

Response: Special uses are discussed in forest plan chapter 2 under the "Special Uses" section. The forest plan supports continued special use activities and provides desired conditions, objectives, standards, guidelines, and management approaches for administration of these uses. These plan components do not replace or remove the current special use permitting process. Permitting and compliance are generally covered in national policy and are therefore outside the scope of the forest plan

Concern Statement: The Forest Service should use and acknowledge volunteers for various projects including cave resource protection, trash removal, trail maintenance, trail technical expertise, preservation activities and reforesting Rustler Park and create a small fund to reimburse volunteers for their expenses. (49.03, 49.04, 49.12)

Response: The use of volunteers is included as a management approach for accomplishing plan desired conditions, objectives, standards, and guidelines. Volunteers are specifically mentioned in the forest plan under management approaches for invasive species, recreation, cultural resources, and the Pinaleño Ecosystem Management Area.

Additionally, the "Collaboration and Volunteers" section of forest plan appendix B supports volunteerism and identifies possible areas where volunteers could work well:

> "The Coronado National Forest intends to create increasing opportunities for volunteers and partners to be more active as part of national forest management."

Volunteer reimbursement is directed by the Forest Service handbook and is outside the scope of this plan.

Concern Statement: The Forest Service should retain Management Areas 2A and 2B. (49.14)

Response: The basic concepts of former Management Areas 2A and 2B described under the 1986 forest plan were carried forward in the proposed plan in the new Developed Recreation Management Area. This new management area was developed based on public input, administrative and other user needs, and comments received during the planning process.

Concern Statement: The Forest Service should maximize conservation and restoration efforts in particular by protecting desert ecosystems, springs, summits, Cave Creek Canyon, and Sky Islands by limiting human uses, actively managing the forest allowing for stewardship, and using fire to help improve forest health. (49.06, 49.07, 49.08, 49.10, 49.16, 49.17, 49.23, 49.27, 49.28)

Response: We agree with your comments and the forest plan includes components to address protecting desert ecosystems. See the following discussions:

- "Desert Communities" in chapter 2
- "Forestwide Management," Springs under "Natural Water Sources" in chapter 2

Cave Creek Canyon under the Chiricahua Ecosystem Management Area and the sky islands of the Coronado are addressed collectively throughout the plan based on "Forestwide Management," "Management Areas," and "Geographic Areas".

Concern Statement: The Forest Service should ensure no one use precludes or significantly diminishes other uses. In particular, managing for biodiversity or ecosystem management should be avoided because this approach would conflict with the Multiple Use-Sustained Yield Act and inappropriately shift the agency's authority/focus. (49.02, 49.15)

Response: We agree a focus solely on biodiversity over other uses would not meet the legal requirements of the National Forest Management Act or Multiple Use-Sustained Yield Act, which requires forests to be managed using multiple use-sustained yield principles. The plan contributes to ecological, social, and economic sustainability focused on meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The plan gives direction to manage the Coronado National Forest consistent with the Multiple Use-Sustained Yield Act of 1960 and provide goods and services, including outdoor recreation, timber, range, watershed, wildlife, and fish.

Although the plan and environmental impact statement are organized by individual resources or uses, the development of the plan and environmental impact statement used an interdisciplinary process (see "List of Preparers" section in the forest plan and the "Consultation and Coordination" section in chapter 4 of the environmental impact statement) considering input from a wide range of stakeholders and resource specialists with the intent of providing direction for all forest natural resource management activities.

Future projects and activities must be consistent with the forest plan and various laws, and agency policy and direction to manage vegetation and natural resources for multiple uses, all of which provide resource outputs for human society either directly or indirectly.

Concern Statement: The Forest Service should clarify whether they will regulate activities on the Coronado National Forest that will result in cumulative effects beyond the forest boundary. (49.13)

Response: The environmental impact statement for the forest plan does consider activities on other ownerships to describe the potential cumulative environmental consequences on a particular resource.

The plan is programmatic and does not identify (or prohibit) specific activities that may result in cumulative effects beyond the Coronado National Forest boundary. Activities would be addressed site specifically at the project level, which would include cumulative effects and would be consistent with the Council on Environmental Quality's National Environmental Policy Act regulations 1508.7:

> "Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."

Additionally, many potential activities are guided by existing law, regulation, and policy, which are outside of the scope of the forest plan as described in chapter 3 of the environmental impact statement. Future projects and activities, of any kind, must be consistent with the forest plan and

various laws, agency policy, and direction. The plan provides protections (see standards and guidelines for each resource area and land use zones) to regulate activities and future activities on Coronado. Further, management approaches help guide decision making by the responsible official.

Concern Statement: The Forest Service should determine the suitability for timber production of portions of the national forest and review its prior classification of lands as unsuitable for timber production to comply with the National Forest Management Act and case law. (49.18)

Response: The forest plan follows Forest Service Handbook 2409.13, chapter 20 on evaluating lands suitable for timber production. Timber suitability is described in chapter 5 of the forest plan, and the process for determining timber suitability is described in appendix C of the environmental impact statement.

Concern Statement: The Forest Service should explain how suitability was evaluated. Including how staff experience was used and how needs and conditions were measured. (49.19)

Response: The forest plan follows Forest Service Handbook 2409.13 chapter 20 on evaluating lands suitable for timber production. Suitability determinations for timber production are described in chapter 5 of the plan, and in appendix C of the environmental impact statement. Suitability for livestock grazing is described in chapter 5 of the forest plan and appendix E of the environmental impact statement. Suitability determinations for other resources are described in chapter 5 of the forest plan.

Concern Statement: The Forest Service should acknowledge that the historical range of variability is neither achievable nor sustainable in light of climate change, landscape fragmentation, and nonnative species invasions. (49.22)

Response: The historical range of variation may (a) provide information relevant to ecosystem resiliency or vulnerability to projected climate change effects and other disturbances; and (b) help to identify the most urgent ecosystem needs and effective restoration methods to increase resilience for a given ecosystem. We agree the historical range of variation may never be achievable given various ecological and social reasons. As such, it does not define desired conditions but provides valuable information for reference. It has been useful for understanding fire ecology and disturbance processes, watershed hydrological function, and distribution of plant and animal populations.

Concern Statement: The Forest Service should manage the lands for the people by providing for outdoor recreation, human occupancy, and use, and avoid restricting access to the forest. (49.25, 49.29)

Response: The plan contributes to ecological, social, and economic sustainability focused on meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The plan gives direction to manage the forest consistent with the Multiple Use-Sustained Yield Act of 1960 and provides goods and services including outdoor recreation, timber, range, watershed, wildlife, and fish.

The Multiple Use-Sustained-Yield Act of 1960 (section 1) states that,

> "the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

The National Forest Management Act (section 6(e)(1)) states that in revising plans,

> "provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use, Sustained-Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness…"

The proposed plan provides broad guidance and information for project decision making and is strategic in nature. It does not contain project and activity decisions such as permitting or prohibiting occupancy, use, or access. Decisions to close or restrict access on the Coronado National Forest are determined during travel management planning. Public access determined by the travel management process is guided by the motor vehicle use map. As part of this process, we identified the road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands.

Additionally, the plan provides for a variety of recreation opportunities: motorized, nonmotorized, developed, dispersed, and everything in between. However, not every recreation opportunity can be found everywhere on the Coronado National Forest.

Concern Statement: The Forest Service should correct the description of the Huachuca Ecosystem Management Area to correctly refer to Red Rock Canyon. (49.26)

Response: The change has been made to the forest plan.

Concern Statement: The Forest Service should reconsider placing emphasis on open space as a value in the plan because this does not reflect the values of the nearby rural communities. (49.30)

Response: The topic of preservation of open space is addressed in the forest plan in the sections "Range Management" and "Land Ownership Adjustments and Boundary Management" because of its importance on a national, and local level. It is reflected in the Forest Service strategic plan as well as a number of County strategic plans, including many of the counties surrounding the Coronado National Forest. It is a particularly important land use issue, given both the public's desire to maintain the "rural character" of county lands and the need to accommodate rapidly growing populations in municipalities. The concept of preserving open space is widely recognized as a primary tool for sustaining ecosystem components and processes across landscapes.

Concern Statement: The Forest Service should use the Four Traditional Guiding Principles of the Elders Cultural Advisory Council when addressing climate change issues. (49.31)

Response: The importance of cooperating with tribes and incorporating their perspectives, concerns, and traditional knowledge into management decisions are discussed in chapter 2, "Tribal Relations," in the management approaches section. This includes working with the White Mountain Apache Tribe and taking its best management practices into account.

Concern Statement: The Forest Service should finalize and implement the Mount Graham recovery plan. (49.32)

Response: On page 277 of the draft environmental impact statement, we acknowledged that a revision of this recovery plan is currently in preparation. When the recovery plan is finalized, the forest plan will comply with it under guideline ARP-G-1. The creation of a recovery plan is under the authority of the U.S. Fish and Wildlife Service rather than the Forest Service. We will assist in

this process as much as possible and will comply with it during project planning and implementation phases.

Roles, Authorities (51)

Concern Statement: The Forest Service should prohibit foresters from taking money from mining companies because it causes a conflict of interest. (51.01)

Response: This is outside the scope of the forest plan.

Concern Statement: The Forest Service should have the authority to close areas to permit recovery and facilitate decision making. (51.02)

Response: This is outside the scope of the forest plan.

Concern Statement: The Forest Service should increase staffing on the forest to address increasing visitation rates and have a full-time presence. (51.03)

Response: Staffing levels are outside the scope of the forest plan.

Concern Statement: The Forest Service should explain why national forests are managed under the Department of Agriculture instead of the Bureau of Land Management. (51.04)

Response: This is outside the scope of the forest plan. Information on the history of the Forest Service can be found at: http://www.fs.fed.us/documents/USFS_An_Overview_0106MJS.pdf

Social Actions or Analyses

Concern Statement: The Forest Service should integrate tribal traditional ecological knowledge into the planning process. (54.01)

Response: Integration of tribal traditional ecological knowledge into the planning process is found in chapter 2 of the forest plan in the "Tribal Relations, Management" section. We are working with tribes to collaborate in ecosystem restoration efforts.

Concern Statement: To comply with laws and the U.S. Constitution, the Forest Service should reconsider the deference provided to Native Americans' practice of religion and ensure that the plan will protect the cultural and historical foundations of the way of life for Native American tribes, such as the Ndee. (54.02, 54.04)

Response: We agree that the practice of religion for federally recognized tribes on National Forest System lands should continue. Such practices are protected under laws and regulations in which the forest plan and forest management is compliant. Enforcement of these laws and regulations is not a forest plan component but is a requirement of the agency, regardless of the land management plan in effect.

Concern Statement: The Forest Service should provide for training of new employees about the forest's unique legal relationship with the tribes to assist them in avoiding mistakes. (54.03)

Response: A discussion of training of new employees is found in chapter 2 of the plan in the "Tribal Relations; Management Approaches" section. The Forest Service will provide employees opportunities to receive training so they understand the unique legal relationship between the Federal government and Indian tribes.

Concern Statement: The Forest Service should acknowledge the effect that forest management has on Native Americans, and that the public interest may not always coincide with tribal desires. (54.05, 54.06)

Response: We agree forest management has different effects on the different communities we serve. The Forest Service is guided by law, policy, and guidance including the National Environmental Policy Act, which provides a framework to assess the impacts to communities including tribal communities. We are aware of cultural ties to the land and are working to build a collaborative relationship with the twelve neighboring tribes. We are working together to achieve mutual desired conditions and objectives and to collaborate on ecosystem restoration efforts and address tribal cultural needs and desires.

Draft Environmental Impact Statement, Alternatives, and Analysis

Effects Analysis (17)

Concern Statement: The Forest Service should revise the cumulative effects analysis to extend the timeframe and provide a more accurate disclosure of effects to include the motorized transportation system. (17)

Response: The temporal bound for the cumulative effects analysis is the same as the planning period (10 to 20 years). This period is consistent with section 219.10(g) of the 1982 Planning Rule, which states "a forest plan shall ordinarily be revised on a 10-year cycle or at least every 15 years." The intent of the Coronado National Forest is to revise the next forest plan in this planned timeframe. This timeframe is also consistent with the more recent 2012 Planning Rule, which would guide the next revision process. Section 291.7 of the 2012 Planning Rule reiterates direction from the National Forest Management Act, stating that "a plan must be revised at least every 15 years" (16 U.S.C. 1604(f)(5)). The 2012 Planning Rule further explains the cause for delay in recent plan revisions: "The efforts to produce a new planning rule over the past decade have contributed to the delay in plan revisions. With clarity and stability in planning regulations, land management planning can regain momentum and units will be able to complete revisions more efficiently" (36 CFR Part 219).

The draft environmental impact statement does not include an analysis of the motorized transportation system, as noted in Chapter 3 under the "Visitor Experiences" section:

> "Under all alternatives, future changes in the miles of NFS roads and motorized trails would be evaluated site specifically as needs are identified and in accordance with the transportation analysis process and Travel Management Rule requirements".

The Coronado National Forest is currently evaluating the motorized transportation system on all five ranger districts through site-specific analyses, pursuant to the Travel Management Rule (36 CFR §212). The forest plan and associated environmental impact statement are programmatic and do not repeat or revisit site-specific analyses already underway through the travel management planning process. The site-specific analyses for travel management include disclosure of effects to natural and cultural resources as well as cumulative impacts.

The forest plan provides desired conditions for the motorized transportation system that will be reflected in the site-specific travel management analyses. The plan also addresses the suitability

of motorized uses in different areas of the Coronado National Forest. In the "Recreation" section of chapter 2, the plan provides management approaches that include

> "implementing Travel Management decisions to expand semiprimitive nonmotorized opportunities, allocated motorized vehicle access points for dispersed recreation, increase fiscal efficiencies, reduce environmental impacts, and support quiet recreation experiences."

Forestwide standards and guidelines under the "Motorized Transportation System" section state that:

> "Motor vehicle use is allowed on the designated system of roads and motorized trails shown on the motor vehicle use map that is available at each ranger district office. Motor vehicle use is prohibited in all other locations, unless it is specifically authorized by law, permit, and/or orders issued by the Forest Service in conjunction with resource management and public safety actions".

Concern Statement: The Forest Service should modify the effects analysis to: (1) comply with the 1982 Planning Rule and NEPA ensuring the effects are clearly disclosed and to analyze the effects of changing the forest plan, (2) complete more thorough disclosure of effects to the motorized transportation system and evaluate the effects of locatable minerals within the established land zones identified in the draft land and resource management plan and, (3) evaluate the effects of removing soil, watershed, and riparian standards from the plan. (17.01, 17.02, 17.04, 17.05)

Response: (1) The effects analysis complies with the 1982 Planning Rule and the National Environmental Policy Act. The no-action alternative represents the 1986 plan and is analyzed in the environmental impact statement. Chapter 3 of the environmental impact statement analyzes the effects of changing the current plan to potentially one of the alternatives or proposed action and includes comparison to the 1986 forest plan.

(2) The forest plan does not authorize or mandate any site-specific projects or activities such as motorized transportation or locatable minerals; therefore project-based effects are not considered in this analysis. The effects of motorized transportation and locatable minerals will be analyzed at the project level in site-specific National Environmental Policy Act documents at a future date. Project-specific effects analysis will incorporate the desired conditions and guidelines for each land use zone as identified in the plan. In addition, the plan contains standards and guidelines for limiting motorized travel to designated roads and trails, and sets the framework for implementing the Travel Management Rule (see the "Motorized Transportation System" section in chapter 2 of the plan). The "Mineral Resources – Environmental Consequences" section in chapter 3 of the environmental impact statement discusses the effects of locatable minerals in wilderness and research natural areas. Additionally, mineral proposals would continue to follow the direction of laws, regulations, and policies.

(3) The effects of removing or modifying standards put forth in the 1986 plan, including those for watershed, soil, or riparian areas, are analyzed in chapter 3 of the environmental impact statement, which discloses the effects of no action (the 1986 forest plan) compared to the proposed action.

Concern Statement: The Forest Service should analyze the consequences of eliminating regional guides. (17.03)

Response: There is no longer a regional guide for the Southwestern Region. This was withdrawn as required by the 2000 Planning Rule (CFR 219.35(e), 2000 Planning Rule).

Issues, Alternatives (28)

Concern Statement: The Forest Service should reject Alternative 1 because it would unduly restrict a wide range of multiple uses and could restrict motorized access to the forest. (28)

Response: The Modified Proposed Action Alternative is selected as the new Coronado Forest Plan as it better meets the needs of all recreational activities including mountain biking. Alternative 1 would increase areas managed for wilderness character by approximately 14 percent which could exclude some user groups because motorized and mechanized uses are prohibited in wilderness. Because of restrictive standards and guidelines for motorized and mechanical uses in wilderness, alternative 1 would marginally increase the cost and impede the accomplishment of forest health improvement projects that would benefit recreation settings and increase the complexity of fire management.

Concern Statement: The Forest Service should select Alternative 2, "Motorized Recreation Emphasis" to better manage OHV use to reduce conflicts between motorized and non-motorized users and add mitigation measures to protect the Arizona Trail. (28)

Response: Thank you for your comment. There are differing opinions regarding which alternative the responsible official should select. The responsible official will select an alternative based on the analysis presented within the environmental impact statement and public input. Alternative 2 is included in the final environmental impact statement and is analyzed in full.

The plan contains guidance that will help protect the Arizona Trail in Chapter 3, Management Areas, Arizona National Scenic Trail.

Concern Statement: The Forest Service should accept alternative 1 to increase wilderness because road density and visual quality standards would be strengthened and reject the alternative that increases motorized use because climate change is not adequately addressed, invasive species spread would increase, human-caused fires would increase and grassland communities and eagle populations would be negatively affected. (28.06, 28.11)

Response: All four alternatives are described in chapter 2 and analyzed in chapter 3 of the environmental impact statement. Rationale for the selection of the modified proposed action alternative and the final plan are described in the record of decision document.

Concern Statement: The Forest Service should consider alternatives that maximize ecological systems for protection for wildlife, vegetation, riparian areas, watersheds, soils, range and incorporates the effects of climate change on the ecosystem. Additionally, Native American land management practices should be incorporated into this alternative. (28.03, 28.05)

Response: All four alternatives have common objectives pertaining to wildlife, vegetation, water resources, soils, and grazing livestock which can be found in the "Revised Plan Content Common to all Alternatives" section of chapter 2 of the environmental impact statement. They include:

- conserve soil and water resources;
- cause no significant or permanent loss of productivity of the land;
- provide for and maintain a diversity of plant and animal communities to meet multiple use objectives;
- provide suitable, well-distributed habitat across the Coronado to ensure species viability; and
- include measures for preventing the destruction or adverse modification of critical habitat for threatened and endangered species.

The effects of climate change are analyzed for all alternatives and are discussed in chapter 3 of the environmental impact statement. In addition, the plan provides plan components and management approaches for each subject area. This management direction provides a framework to sustain native ecological systems by managing toward desired conditions that support native plant and animal diversity. The plan promotes resiliency for vegetation communities which are highlighted in the "Desired Conditions" section in chapter 2 of the plan. As a whole, the plan provides direction that contributes to ecological, social, and economic sustainability.

In the "Revised Plan Content Common to all Alternatives" section of chapter 2, three objectives pertain to Native American resources, relationships, and practices:

- require consultation with tribes about traditional resources, ties, and interests about site-specific proposed actions
- recognize and respect the unique status of Native American tribes and their rights conveyed by trust and treaty with the United States
- protect heritage resources

An alternative exclusively addressing ecological systems was eliminated from detailed consideration because it would not meet the legal requirements of the National Forest Management Act or Multiple Use-Sustained Yield Act, which require forests to be managed using multiple use-sustained yield principles. The purpose of this analysis is to revise the current forest plan to continue to meet the multiple use mandate,; maximization of ecological systems at the expense of other resources does not meet the purpose and need.

Concern Statement: The Forest Service should acknowledge that Tucson Electric Power Company may need to undertake alternative land sections to sustain service to the Bigelow, Elephant Head, and Melendrez [electronic] sites in alternatives 1 and 2. If no action or the proposed action is selected, no additional undertakings would need to occur by TEP. (28.04, 28.07, 28.08, 28.09)

Response: The plan contains standards for communication sites and addresses utility lines connecting to communication sites; see the "Special Uses" section of chapter 2. Special use permitting [undertakings] is accomplished on a site-specific, case-by-case basis in conformance with Forest Service Handbook 2709.11 - Special Uses Handbook and in accordance with the National Environmental Policy Act through environmental analysis.

Natural Resources Management

Air Quality Management (1)

Concern Statement: The Forest Service should include more information on abatement and sources of fugitive dust. (1.05, 1.06)

Response: The forest plan calls for meeting all air quality regulations and legal requirements. Fugitive dust resulting from Forest Service projects will be evaluated through the National Environmental Policy Act process on a case-by-case basis. In terms of abatement of fugitive dust, best management practices to mitigate the impact of particulates on air quality are developed at the project level on a case-by-case basis. The use of water to reduce fugitive dust is a common best management practice. We are required to meet all Arizona Department of Environmental Quality and New Mexico Environmental Department regulations, national ambient air quality standards, and the Clean Air Act.

Concern Statement: The Forest Service should retain the desired condition for air quality. Because it is consistent with the area's class 1 Clean Air Act designation. (1.02)

Response: Protection of the air quality in class 1 airsheds, including the Chiricahua Wilderness and Galiuro Wilderness, are considered in all project analyses and retained in the forest plan under the “Air” section in chapter 2, “Forestwide Management” in the “Desired Conditions,” “Guideline,” and “Management Approaches” sections.

Concern Statement: The Forest Service should include management practices for emissions from fire, PM10, and fugitive dust in cooperation with ADEQ. (1.01, 1.03)

Response: The environmental impact statement discusses the coordination that the Coronado conducts with Arizona Department of Environmental Quality and the New Mexico Environmental Department to ensure that various factors that influence air quality related to prescribed fire are addressed appropriately by mitigation or avoidance to minimize adverse effects. This coordination involves balancing the timing, duration, location, and frequency of prescribed fires with other national forests and agencies to maintain air quality. In the forest plan, we added a management approach to emphasize coordination with the State air quality agencies regarding all particulate matter and fugitive dust issues associated with Forest Service activities.

Concern Statement: The Forest Service should acknowledge that a General Conformity Determination by the Air Quality Division is not required because the project's total emissions would be less than the de minimis levels in Title 40 CFR section 51.853(b) and section 93.153(b). (1.04)

Response: We agree the actions outlined in the forest plan do not warrant a general conformity determination, because there are no project-level decisions proposed in the documents.

Biological Resources Management (3)

Concern Statement: The Forest Service should avoid grouping Endangered Species Act (ESA) - listed species with ecosystem diversity characteristics as a substitute for the obligation under ESA to consult on potential effects to listed species to comply with NFMA and the ESA. (3)

Response: The referenced ecological sustainability report is not a substitute for completing consultation with the U.S. Fish and Wildlife Service on listed species. The U.S. Forest Service

prepared and submitted a biological assessment (and an addendum in January 2017) evaluating 24 listed species to U.S. Fish and Wildlife Service in May 2015, and U.S. Fish and Wildlife Service personnel issued a biological opinion in April 2017. In addition, the species viability assessment evaluated 437 species to identify threats, availability of suitable habitat, habitat trends, and population trends.

Concern Statement: The forest plan should focus on preserving biodiversity. (3.01, 3.04, 3.05)

Response: The concept of preserving biodiversity is central to the forest plan. Recognized early in the revision process as a need for change in the Comprehensive Evaluation Report (2009), ecosystem restoration and resiliency became one of the five topics the revised forest plan was developed to address. The specific needs for change related to biological diversity are listed on page 8 of the plan, and the related plan components are found in 25 sections related to "Forestwide Management," as well as in the "Geographic Area" management direction. An important component of preserving biodiversity is providing for the viability of species. The results of the viability analysis are summarized in the environmental impact statement, chapter 3, in the "Species Diversity and Viability" section. From an initial list of 1,400 species, 437 species were evaluated closer to determine if viability concerns existed. Of these 437 species, 362 were found to have little to no risk to their viability. Seventy five species were found to have some risk to their viability. Analysis of these 75 species generated additional plan components to ensure their viability. The plan components that address viability concerns are found in tables 75, 105 and 106 of the environmental impact statement. To summarize, findings confirm the revised forest plan will be effective in moving towards desired conditions for preserving biological diversity.

Concern Statement: The Forest Service should address invasive species management in the forest plan. (3.02, 3.11)

Response: Chapter 2 in the forest plan includes forestwide management for invasive species. The section starts with the following desired condition statement:

> "Infestations of invasive exotic plants do not contribute to the loss of native species or impairment of ecosystem function. Invasive animals are nonexistent or occur in low numbers and do not significantly affect the productivity or sustainability of native wildlife."

There are specific objectives related to the invasive species buffelgrass in deserts. The forest plan then outlines an integrated pest management approach that includes detection and treatment, coordination with other agencies and neighboring jurisdictions, and using the program to help in recovery of federally listed threatened, endangered, or proposed species as well as Forest Service sensitive species.

Concern Statement: The Forest Service should disclose the existing conditions of riparian and aquatic habitat and ecosystems and proposed protections for maintenance and restoration. The Forest Service should include standards and guidelines to protect these habitats. (3.09, 3.16, 3.17, 3.19)

Response: Chapter 3 includes a section entitled "Species Diversity and Viability", and it includes a description of the affected environment for all vegetation communities on the Coronado National Forest. The affected environment for montane meadows, wetlands, and riparian areas includes the habitat quality subsection for riparian habitat that describes the existing condition of

riparian areas to the extent that existing monitoring data allows. This section identifies the difficulty of applying a standard assessment protocol to a large variety of areas that each has very different vegetation potential. Nonetheless, the section states that, based on available data, between 33 and 87 percent of transects show a stable or increasing trend.

Many of these habitats support, or have the potential to support, sensitive aquatic species and so these areas were given specific plan components to provide additional protection. As an example, the plan includes many components designed to enhance or restore native, warm water fish habitat. Examples include NWS-O-1 and NWS-O-2, which are objectives to acquire water rights on areas where fish occur as well as objectives to reconstruct springs to support native wildlife including fish. Guideline ISM-G-1 will result in the removal of nonnative, invasive plant and animal species where fish and other special status aquatic species occur. The guidelines NWS-G-2, NWS-G-3, NWS-G-4, and NWS-G-5 allow for natural instream movement, reduce fuel build up, and protect water quality, quantity, and habitat features at natural springs and seeps prioritized in habitat where fish occur.

Concern Statement: The Forest Service should protect the sensitive areas of the forest to preserve research opportunities and protect them from further degradation. (3.06)

Response: The forest plan identifies special management areas to preserve the many research opportunities across the Coronado. Research natural areas and botanical and zoological areas are designated to ensure protection of specific biological and zoological communities. Research natural areas are areas the Forest Service has designated to be permanently protected and maintained in natural condition, so they may serve as experimental research controls and monitoring sites for the particular ecosystem they represent and used for education.

There are six existing research natural areas on the Coronado National Forest: Pole Bridge, Goodding, Elgin, Goudy Canyon, Butterfly Peak, and Santa Catalina. The Pole Bridge, Santa Catalina, Goodding, and Goudy Canyon Research Natural Areas overlap with designated wilderness areas. The Coronado National Forest currently has three proposed research natural areas, two of which are expansions of existing research natural areas: Canelo, Goodding Extension, and Pole Bridge Extension.

Concern Statement: The Forest Service should protect the South Fork, Cave Creek Canyon, Portal watershed to allow for the study of raptors. (3.13)

Response: We recognize the importance of Cave Creek Canyon as habitat for raptors. The forest plan establishes a special management area, Cave Creek Canyon Birds of Prey Zoological-Botanical Area, with a desired condition that “The unique resources that provide habitat for the highest number of birds of prey in the U.S. are maintained or enhanced.” In response to concerns from many scientists that conduct research on raptors in the area, no extra restrictions on research were imposed. However, it should be noted that permits are required for collection of plants or animals in all zoological-botanical areas. The forest plan also carries forward the South Fork of Cave Creek Zoological-Botanical Area. A standard for this area requires a permit to conduct any scientific research that would involve leaving anything in the area.

Concern Statement: The Forest Service should prioritize maintaining ecosystem health and resilience to address changes from climate change. (3.12)

Response: We agree we should prioritize maintaining ecosystem health and resilience to address changes from climate change, and the forest plan does this. Ecosystem restoration and resiliency

is one of the 5 topics around which the forest plan was developed. Table 19 in the environmental impact statement displays the effectiveness of each alternative in addressing the need for ecosystem restoration (health) and resiliency. The forest plan addresses the components of resilient ecosystems throughout the "Vegetation Community" section, and in the "Natural and Constructed Water Sources" section.

Climate change is addressed directly in the first section of chapter 2, with desired conditions for the Coronado National Forest's response to climate change. Management approaches are then described highlighting the importance of planning for disturbances, increasing water conservation, anticipating increased forest recreation and monitoring climate change influences as well as the effectiveness of adaptation approaches. There is additional direction concerning climate change found in forest plan appendix A, "Climate Change Trends and Coronado National Forest Land Management Planning."

Concern Statement: The Forest Service should revise the desired conditions related to extirpation of native species to account for the process of climate change. (3.18)

Response: We have modified the management approach in the "Animals and Rare Plants" section as follows:

> "Considering the reintroduction of extirpated species to habitats that are reasonably assured to remain suitable through climate change."

An additional measure that is taken in the forest plan is the establishment of the Finger Rock Research Natural Area, dedicated to the study of climate change. This unique outdoor laboratory will encourage the study of how native species respond to climate change. The results of these studies can then be used to inform future management decisions regarding extirpated species.

Concern Statement: The Forest Service should acknowledge that the principles of conservation biology are not scientific data and should not be used as the basis for addressing biological issues. (3.03)

Response: We recognize various fields of study, such as conservation biology, have supporters and detractors. The forest plan was developed using best available science and professional judgments and includes public input and collaboration with significant tribal involvement, which helped shape approaches to natural resource management. Since we manage the land and habitats that plant and animal species are depend upon, our approach has been to manage the habitat to maintain resilience that will provide the life history requirements of the greatest number of species. An example of this approach is evident in the species viability approach to considering effects of management activities on wildlife species. In this case, a large list of 1,400 species was initially considered to identify those for which there may be viability concerns. Of these, 75 were identified that needed additional plan components to ensure that implementation of the plan would not result in lost viability. Specific components were developed and adopted. In this way species viability was not compromised and populations of these species have the best possibility of persisting through time.

Concern Statement: The Forest Service should revise the desired conditions relating to the collection of animals and plants to include mushrooms. (3.07)

Response: The forest plan includes fungi in the "Forest Products" section.

Concern Statement: The Forest Service should acknowledge that recreational use poses a serious threat to animals and rare plants, from fires, soil compaction, destruction of vegetation, and diminished water quality. (3.08)

Response: These have been described in the viability analysis, biological assessment, biological evaluation, the plant and animal section, and consultation with the U.S. Fish and Wildlife Service.

Concern Statement: The Forest Service should confine restoration projects to small areas and provide for monitoring to allow for adaptive management and assessment of results. (3.10)

Response: The forest plan allows for restoration activities at multiple scales. Treatments are limited in certain places; however, larger treatments are appropriate in some circumstances to meet project goals. All projects are subject to National Environmental Policy Act analysis to determine appropriate scale.

Monitoring and evaluation activities provide ongoing feedback about management effectiveness and are essential elements of an adaptive management cycle that includes problem identification, solution, and implementation. Monitoring and evaluation keep direction found in the forest plan up to date and relevant by being responsive to changing conditions and issues—including public desires—and to new information, such as research results or outcomes from management activities.

Concern Statement: The Forest Service should use hierarchies of ecosystem type and scale to achieve desirable outcomes. (3.14)

Response: We agree. The forest plan includes management direction that applies at a forestwide scale, then downscales the scope of management direction to the ecosystem management area, land use zones, geographic areas, and special management areas. Forestwide management can be found in chapter 2 of the forest plan. Forestwide management contains plan decisions and other content for various resources that are applicable throughout the national forest, wherever the particular resource occurs. Forestwide management for vegetation communities is described at three scales: landscape scale, mid-scale, and fine scale. Management areas can be found in chapter 3 of the forest plan. Management areas contain plan decisions and other content that is applicable to a particular management area, which may occur in multiple places. The Coronado National Forest is divided into six management areas, including wilderness areas and land use zones. Geographic areas can be found in chapter 4 of the forest plan. Geographic areas describe the management direction that applies to unique geographic areas called ecosystem management areas. These are unique places based on geography. This chapter also includes special management areas, which are also unique, with management direction that only applies to that place. We believe that this approach to hierarchies in management direction at multiple scales will provide the best means by which to achieve desirable outcomes for the multiple scales of ecosystems within the Coronado National Forest.

Concern Statement: The Forest Service should ensure that the desired conditions related to animals and rare plants are modified to account for the international boundary fence. (3.15)

Response: The international boundary fence is outside the scope of the forest plan. The international boundary fence is not a Coronado National Forest activity. The wildlife movement corridors are identified in the “Animals and Rare Plants” section and desired conditions state that “forest boundaries are permeable to animals of all sizes and offer consistent, safe access for ingress and egress of wildlife.”

Climate Change (5)

Concern Statement: The Forest Service should consider and disclose the extent and degree to which climate change affects national forest lands and resources because climate change is likely to have significant effects on biodiversity, forests, and water availability to comply with NEPA. (5)

Response: Appendix A of the plan entitled "Climate Change Trends and Coronado National Forest Land Management Planning" provides an overview of likely climate trends as shown by predictive models and the potential effects to forest resources such as biodiversity, surface water, forage for grazing, and recreational opportunities. The appendix also outlines strategies for management of ecosystems to promote resiliency into the future. The plan does not authorize a particular activity but provides guidance and desired conditions for site-specific projects that will be analyzed in accordance with the National Environmental Policy Act in the future. The Council on Environmental Quality issued guidance in 2016 to assist Federal agencies in their consideration of the effects of greenhouse gas emissions and climate change when evaluating proposed Federal actions in accordance with the National Environmental Policy Act. This guidance will be implemented for future projects tiered to the plan.

Concern Statement: The Forest Service should assess and disclose the potential contribution of multiple resource uses to regional and global climate change because the environmental consequences are significant. (5)

Response: The plan does not authorize a specific action for resource management so it is not possible to quantify the contribution of the plan to regional and global climate change. This type of analysis is most applicable at the project scale. For instance, one could evaluate the difference in greenhouse gas emissions between prescribed burning or mastication to reduce woody plant density and use this information to decide between alternatives. It is not currently feasible to quantify the indirect effects of individual or multiple projects on global climate change and therefore determining significant effects of those projects or project alternatives on global climate change cannot be made at any scale.

Concern Statement: The Forest Service should include a commitment with objectives, guidelines, and mitigation strategies to address climate change including those developed for the Sky Island region, and Kaibab National Forest plan. (5.04, 5.05, 5.15, 5.16)

Response: The Coronado National Forest participated in the development of the Adaptation Action Plan for the Sky Island Region and is in the process of implementing various projects identified in the action plan to help achieve those goals. Climate change is addressed directly in the revised plan in the first section of chapter 2. Throughout the plan there are desired conditions and other components that represent and protect elements of functional ecosystems and resilient landscapes. The plan provides for maintaining attributes of resilient ecosystems throughout the "Vegetation Community" section, and in the "Natural and Constructed Water Sources" section. Appendix A of the revised plan entitled "Climate Change Trends and Coronado National Forest Land Management Planning" contains information on the threats climate change poses to the unique sky island habitats and potential climate change mitigation strategies.

Concern Statement: The Forest Service should include a more thorough discussion and disclosure of the effects of climate change on multiple resources (including vegetation and water), management strategies to adapt to climate change, and how this affects ranchers and adjacent land owners. (5.02, 5.03, 5.06, 5.08, 5.11)

Response: Climate change is a new science and our understanding of the effects of climate change on forest resources continues to develop. The Forest Service is addressing climate change at the regional and national forest level and has developed the document, "Southwestern Region Climate Change and Forest Planning" (USDA Forest Service 2010) to help guide our management activities to adapt and respond to climate change. The forest plan contains a section outlining desired conditions and management approaches to help address climate change that follows regional direction. Further, plan components are found in the "Vegetation Communities" and "Natural Water Sources" sections that are designed to adapt those resources to climate change. We address climate change at the project level in all National Environmental Policy Act assessments, and any potential effects of our activities to ranchers or adjacent landowners would be analyzed and disclosed at that point. Multiple use activities are consistent with desired conditions for all plan resource areas and were considered in the effects analyses. Further, the plan components were developed to account for uncertainties related to climate change, and provide for resilience and adaptability Therefore, the plan components assessed and disclosed in the environmental impact statement account for climate change effects in the respective resources areas.

Concern Statement: The Forest Service should identify nonclimate stressors that are exacerbating the effects of climate change to allow for prioritization of these efforts and mitigation of these stressors to be incorporated into the plan. (5.07, 5.09)

Response: Nonclimate stressors that are likely to be affected by future climate variability are identified in chapter 3 of the environmental impact statement in the "Climate Change" section. These include insect infestation, disease, introduced species, fire, water use and demand, and increased socioeconomic demands. Potential climate change strategies for the Coronado National Forest are identified in appendix A of the plan. Although nonclimate stressors are not prioritized in this strategy, there are adaption options presented to mitigate the effects of these stressors. The plan components were developed considering climate change and climate effects and these effects were analyzed in the plan. The Forest Service is a multiple use agency. Multiple use and other activities are consistent with desired conditions for other plan resource areas and were considered in the effects analyses. Further, plan components were developed to account for climate change with management strategies such as resiliency and adaptability. For an example of this approach in the forest plan, see chapter 2, "Forestwide Management, Natural Water Sources and Constructed Waters."

Concern Statement: The Forest Service should consider the effects of grazing on climate change because livestock are a significant contributor to greenhouse gas emissions. (5.10)

Response: Concentrated animal feeding operations (feedlots which may have more than 50,000 head) are known to contribute to carbon dioxide emissions because they have large quantities of decomposing manure which releases methane and carbon dioxide into the atmosphere. Grazing on the Coronado National Forest is widely distributed and the number of livestock on the Coronado at any given time is at a minimal density. Additionally, manure is not confined to one area. It is dispersed, and when it decomposes, it contributes to soil organic carbon and is available as soil nutrients for plant uptake and carbon sequestration. This results in total emissions being minimal and therefore not included in the environmental impact statement.

Concern Statement: The Forest Service should include actions to promote carbon sequestration and storage in the "Management Approaches" sections. (5.12)

Response: The proposed plan was developed in the context of a changing environment and includes a section related to climate change, as well as an appendix of climate change considerations in forest planning. Carbon storage was considered in the context of healthy ecosystems. As described in the environmental impact statement ("Climate Change – Environmental Consequences" section), vegetation treatments under all alternatives, including vegetation removal and planned fire ignitions, would improve the net carbon balance on the Coronado. This is particularly true for treatments in higher-elevation vegetation types carried out under the proposed action, alternative 1, and alternative 2. Although treatments would likely release carbon, they would improve the long-term sustainability of the ecosystem as a carbon sink (Hurteau et al. 2008). Studies have shown fire risk reduction and restoration treatments release less carbon than high-severity fire (Finkral and Evans 2008; Hurteau et al. 2008). Improved ecological conditions resulting from restoration of vegetation toward desired conditions and maintenance of a fire regime consistent with historical fire return intervals would reduce carbon dioxide emissions and improve the sustainability of carbon sequestration by soils on the Coronado.

Concern Statement: The Forest Service should revise the climate change analysis because the analysis relies on inaccurate models: to conform with the requirements of the Multiple Use-Sustained Yield Act, the National Forest Management Act, and National Environmental Policy Act and incorporate the best scientific information available; to reflect the difference between climate change and climate variability; to correct the discussion of flash flooding; to reflect that increased temperatures will likely alter plant communities even if precipitation remains the same; to include contingency plans in case of flooding or debris flows; to reflect that increased temperatures and decreased precipitation will likely have significant effects on soil composition and biota; and to include impacts on recreational users. (5.13)

Response: The state of knowledge needed to address climate change at the national forest scale is still evolving. Because none of the current climate models, including multi-model ensembles, adequately resolves important topographic variations (mountain ranges) and phenomena, such as El Niño – southern oscillation or the North American monsoon, their results are imprecise and the subject of continuing research. However, these models do reproduce much of the underlying features of the Earth's climate, and their basic structure has been proven in various experiments and forecasts of the weather systems from which climate is usually described. Therefore, these models remain a credible means of estimating potential future climate scenarios. Appendix A in the forest plan summarizes current and future climate trends at the regional and, if possible at the forest level. It also describes the difference between climate and weather, climate change and climate variability. The environmental impact statement discloses that the forest plan is consistent with the Multiple Use-Sustained Yield Act, National Forest Management Act, and National Environmental Policy Act, and that the specific requirements in the National Environmental Policy Act for the consideration of climate change and best available science have been met. Current scientific information regarding the effects of climate change on forest resources is incorporated in the revised forest plan. It is presented as a general description of anticipated changes in conditions as they are known to a reasonable level of certainty. It also outlines desired conditions for all vegetation communities to promote their increasing resiliency and adaptation capacity to changing conditions and other stressors, such as extended drought and warmer temperatures, which are projected to occur in the Southwest. In the environmental impact statement, effects of climate change, including potential increases of disturbance events such as flash flooding and debris flows are disclosed for all resource areas which could be affected, including recreation.

Concern Statement: The Forest Service should acknowledge the existence of a web-based clearinghouse for climate-change related information. (5.14)

Response: Thank you for your information regarding the existence of a web-based clearinghouse for climate-change related information. We will continue to use all available sources to obtain the best scientific information related to climate change.

Concern Statement: The Forest Service should reconsider the analysis of climate change because climate change has not been scientifically proven. (5.01)

Response: The Forest Service has reviewed scientific literature related to climate change and developed the Southwestern Region Climate Change and Forest Planning document (USDA Forest Service 2010). The plan follows this regional direction.

Domestic Livestock, Grazing Management (15)

Concern Statement: The Forest Service should use distance from water as a criteria for determining grazing suitability. (15)

Response: The current forest plan analysis meets the regulations for identifying suitable and capable lands and trend. Subsequent site-specific National Environmental Policy Act analysis for each of the allotments is used to determine trend, information and to identify need for change in reference to capability issues. Suitability is the appropriateness of applying certain resource management practices to a particular area of land in consideration of the relevant social, economic, and ecological factors. Areas within the plan area are suitable if livestock grazing is compatible with the desired conditions as evaluated in the forest plan and environmental impact statement “Suitability” and “Capability” sections.

Concern Statement: The Forest Service should prohibit grazing to promote habitat values because it is not a fiscally responsible policy if adequate monitoring is not possible because of budget or manpower constraints. (15)

Response: The current forest plan analysis meets the regulations for identifying suitable and capable lands and trend. Subsequent site-specific National Environmental Policy Act analysis for each of the allotments is used to determine trend, information and to identify need for change in reference to capability issues. Suitability is the appropriateness of applying certain resource management practices to a particular area of land in consideration of the relevant social, economic, and ecological factors. Areas within the plan area are suitable if livestock grazing is compatible with the desired conditions as evaluated in the forest plan and environmental impact statement “Suitability” and “Capability” sections.

Concern Statement: The Forest Service should continue to allow grazing because ranchers maintain water sources that are also used by wildlife as long as fencing is maintained to keep cattle out of riparian areas because there is no evidence that controlled grazing poses any threat to species. (15)

Response: The current forest plan analysis meets the regulations for identifying suitable and capable lands and trend. Subsequent site-specific National Environmental Policy Actanalysis for each of the allotments is used to determine trend, information and to identify need for change in reference to capability issues. Suitability is the appropriateness of applying certain resource management practices to a particular area of land in consideration of the relevant social,

economic, and ecological factors. Areas within the plan area are suitable if livestock grazing is compatible with the desired conditions as evaluated in the forest plan and environmental impact statement "Suitability" and "Capability" sections.

Concern Statement: The Forest Service should manage grazing in reference to drought, as a mechanical treatment tool and a means to enhance wildlife habitat. (15.01, 15.12, 15.13)

Response: The guidelines and management approaches outlined for range management in the forest plan provide management direction for site-specific grazing and adaptive grazing management, which includes management of livestock during drought. Guidelines 1 and 3 provide for grazing management practices that can be modified to meet site-specific resource needs that include maintaining or enhancing wildlife habitat.

Concern Statement: The Forest Service should analyze and consider the impacts of grazing on vegetation and wildlife habitat, including effects of livestock waters. A grazing suitability and capability analysis should be conducted which considers appropriateness and topography to comply with the National Forest Management Act. (15.28, 15.19, 15.20, 15.18, 15.02, 15.21, 15.24)

Response: We agree and have done so. The effects of grazing on vegetation, soil, and wildlife habitat, including the effects of constructed waters used by livestock, are analyzed in chapter 3 of the environmental impact statement. Livestock grazing in relation to land topography is considered in the capability analysis of the forest plan (chapter 5) and in the environmental impact statement. The appropriateness of livestock grazing is determined in the suitability analysis and subsequent designation of suitable areas (forest plan chapter 5). The capability and suitability analyses included in the environmental impact statement meet the requirements of the 1982 Planning Rule. Subsequent site-specific National Environmental Policy Act analysis for each grazing allotment is used to identify needs for changing management to meet desired conditions.

Concern Statement: The Forest Service should provide more specifics about grazing and permit holders, require grazing, provide for grassbanks and forage reserves, and use available unused allotments. (15.05, 15.06, 15.03, 15.17)

Response: The forest plan does not address grazing permit administration. Such administrative issues are addressed in the grazing and livestock use permit system (Forest Service Manual 2231.02) and grazing permit administration handbook (Forest Service Handbook 2209). The forest plan provides guidelines and management approaches that are key to implementing site-specific grazing and adaptive grazing management. Under an adaptive management strategy for livestock grazing, active grazing allotments with a current National Environmental Policy Act analysis can be used to provide range for permitted livestock.

Concern Statement: The Forest Service should provide for management to exclude or restrict grazing in riparian areas to protect riparian and wetland habitats. (15.26, 15.27, 15.04, 15.15, 15.16)

Response: The forest plan and environmental impact statement address the desired conditions and subsequent standards and guidelines in the "Wetlands" and "Riparian Vegetation" sections. Management activities, including grazing, are addressed with the following guideline in the those sections:

> "Management activities should only be allowed in wetlands and riparian areas if soil function and structure, hydrologic function and native mesic plant assemblages are sustained."

The guideline was modified between the draft and final environmental impact statements to be more inclusive of activities and more specific about resource protection.

Concern Statement: The Forest Service should consider developing at least one alternative which looks at a reduction in livestock stocking levels of 25 percent and another at 50 percent. (15.29)

Response: The forest considered two reduced grazing alternatives but concluded the livestock grazing program has multiple mechanisms to evaluate, review, and adapt management as needed to effectively protect resources and respond to changing conditions. Effects from grazing in each range allotment are evaluated and adjusted (1) throughout the season, particularly when pasture rotation is being determined; (2) in detail at the beginning of the season when the annual operating instructions are determined; and (3) comprehensively on 10- to 15-year intervals, or more frequently when needed, as grazing is periodically reauthorized through the environmental analysis process. This allows needed adjustments to be made on a site-specific basis to maintain and move toward desired conditions for watersheds, wildlife habitat, and other resources. For these reasons, an alternative that would have a reduced level of grazing across the Coronado was not studied in detail.

Concern Statement: The Forest Service should clarify how decisions in reference to grazing rates, utilization, and range conditions take place. (15.10, 15.07, 15.08)

Response: The forest plan establishes desired conditions, standards, guidelines, and management approaches pertaining to range condition, including a guideline for light to moderate utilization of forage. Range conditions are evaluated periodically, and decisions on grazing rates and utilization are documented in a site-specific National Environmental Policy Act analysis.

Concern Statement: The Forest Service should authorize the voluntary, permanent retirement of grazing allotments by permittees for conservation purposes. (15.09)

Response: This is outside the scope of the forest plan. The authority to permanently retire an allotment from grazing is retained by the Forest Service and is not held by the permittee.

Concern Statement: The Forest Service should clarify how grazing contributes to natural beauty, quiet places and is a working landscape. (15.11, 15.23)

Response: The forest plan addresses how permitted grazing contributes to natural beauty, quiet places, and a working landscape through the desired condition statement in the "Range Management" section. The statement describes the importance of supporting rural ranching communities. The ranches that hold a permit to graze livestock on the Coronado National Forest typically have additional grazing lands adjacent to the national forest as well. These ranches, consisting of diverse land ownerships, create large working landscapes undeveloped by

urbanization. These landscapes complement the National Forest System lands and ultimately contribute to natural beauty and quiet places.

Concern Statement: The Forest Service should disclose the full costs and benefits of allowing grazing in the national forest because grazing typically costs the Forest Service more than it brings in including the benefits to rural communities versus the effects to the ecosystems of the forest. (15.14)

Response: The costs and benefits of livestock grazing on the Coronado National Forest are included in the "Social and Economic Sustainability" report. Where consistent with other multiple use goals and objectives, there is congressional intent to allow grazing on suitable National Forest System lands (Multiple Use and Sustained Yield Act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Management and Policy Act of 1976, National Forest Management Act of 1976). By regulation, forage-producing lands will be managed for livestock grazing where consistent with land management plans (36 CFR 222.2(c)). Where consistent with the goals and objectives of land and resource management plans, it is Forest Service policy to make forage from lands suitable for grazing available to qualified livestock operators (Forest Service Manual 2202.1, 2203.1).

Concern Statement: The Forest Service should expand prohibitions on grazing of sheep and goats and strengthen grazing restrictions to protect desert bighorn sheep and ensure native wildlife have sufficient forage and cover. (15.22, 15.25)

Response: We have developed grazing standards and guidelines to protect wildlife. Standard 1 in the "Range Management" section states, "Grazing permits will not be issued for domestic goats or sheep in the Galiuro or Santa Catalina Mountain Ranges." Guideline 4 states, "Additionally, grazing management should retain ground cover sufficient for the forage and cover needs of native wildlife species." Furthermore, there are no permits for sheep grazing on the Coronado National Forest, and site-specific National Environmental Policy Act analysis would be necessary to permit this class of livestock.

We updated the Santa Catalina Ecosystem Management Area section by adding an additional standard; the use of domestic sheep, goats, or both for grazing or packing will not be permitted due to the risk of disease transmission to bighorn sheep.

Leasable Minerals (31) and Minerals and Geology Management (32)

Concern Statement: The Forest Service should provide a table showing historic mining permits, define the measure of "high interest," and disclose how much exploration and extraction is anticipated. (32)

Response: The Forest does not have a table showing the historic mining permits issued on the Coronado National Forest because most of the records no longer exist in our files. We have geographic information system (GIS) database records of inventoried metals mines on the Coronado, showing several hundred historic mines, most commonly located on the Nogales and Sierra Vista Ranger Districts. Locatable mineral potential on the Coronado was assessed by the U.S. Geological Survey, resulting in the publication of "Mineral Resource Potential and Geology of Coronado National Forest, Southeastern Arizona and Southwestern New Mexico" (du Bray 1996). This reference states that many parts of the Coronado National Forest have moderate to high potential for locatable minerals. The Rosemont Copper Project environmental impact

statement has been completed and a record of decision signed, indicating viable metal deposits occur on the Coronado. Other favorable host rock that could potentially contain similar metal deposits occur elsewhere on the Coronado. Future locatable minerals exploration and mining activities will depend on market conditions and the corresponding interest in these commodities. This interest cannot be predicted with certainty; however, the geology and mining history of the Coronado National Forest indicates moderate to high potential for these resources.

Concern Statement: The Forest Service should provide a map showing the location of all current mining claims and active and historic mine sites, and include discussion of their potential for environmental damage. The Forest Plan should also clarify the role of the General Mining Law of 1872 in decision making. Additionally, the plan should explain the phrase “minimizing surface resource impacts, consistent with mining regulations and policy”. (32)

Response: The location of mining claims changes according to the economy, to legislation, and to changing technology affecting mineral potential. Because of this, a map of currently existing mining claims will be outdated in a few years or even months. However, this data is considered, along with existing and historic locatable minerals activity, as a part of any site-specific surface disturbing projects on the Coronado National Forest (both for minerals and other resource activities), as part of the National Environmental Policy Act analysis.

Decisions made on the Coronado National Forest must follow all pertinent statutes and regulations. This includes the General Mining Law of 1872, as amended, which conveys the right to an individual or corporation to locate, access, and extract locatable minerals. Subsequent laws, notably the National Environmental Policy Act, require the Forest Service to analyze the impacts to natural and socioeconomic resources from minerals exploration and mining activity, and to disclose and mitigate those impacts. We do not typically have the authority to deny a locatable minerals proposal, but we can modify the proposal to minimize impacts. We have greater discretion to deny access and recovery of saleable and leasable minerals.

Concern Statement: The Forest Service should properly consider mineral exploration and development in the planning area to comply with the 1982 Planning Rule and the Mining and Minerals Policy Act and coordinate with the Bureau of Land Management. (32)

Response: The intent of the Forest Plan is to broadly manage natural and socioeconomic resources, with more specific management of certain areas according to their unique characteristics. In the case of mineral resources, the economy and other constantly changing factors affect the possible land use, and in turn, the management strategy of a given area. An environmental impact statement and record of decision have been completed for the Rosemont Copper Project; however, no other large-scale mining projects are currently being proposed on the Coronado National Forest, and because of this, more specific management criteria are not called for in other areas. This follows the intent of section 219.22 of the 1982 Planning Rule. Additionally, the forest plan is responsive to the 1970 Mining and Minerals Policy Act in that it recognizes the metals and other mineral potential on the Coronado and does not preclude locatable mineral exploration and mining. At the same time, the management strategy takes into consideration direction from other pertinent statute, such as the National Environmental Policy Act, requires consideration of the potential impact to surface resources in the course of mineral and exploration activities, and the necessity of mitigation and reclamation to minimize these impacts.

Concern Statement: The Forest Service should revise the guidelines related to reclaimed mines because they are unobtainable. (32)

Response: The statement "mines and quarries are rarely seen" has been removed from the desired conditions for scenery in the final plan since it is highly subjective as to what constitutes a rare sighting and could be unobtainable depending on the interpretation. The desired condition statement in the final plan now reads, "Mined areas and quarries have been reclaimed and naturalized." The desired conditions and guidelines in the Minerals section of the plan reinforce the Scenery guidelines and desired conditions. For instance, guideline #3 states that mining activities should incorporate reclamation measures that reduce contrasts (allow it to blend) with the surrounding landscapes. Specific reclamation actions are developed at the project level.

Concern Statement: The Forest Service should analyze the impacts of hard rock mining. (32)

Response: It is assumed because of the 1872 mining law reference that the comment is referring to locatable minerals. The forest plan cannot override the General Mining Law of 1872, which provides for property rights in regards to locatable minerals, and reasonable access to those minerals. Impacts caused by locatable minerals operations are addressed in the National Environmental Policy Act (NEPA) analysis for each operation, and with the analysis, the effects are disclosed and then addressed through alternatives to the proposed action (the original proposal submitted in a plan of operations) and through mitigation. Conditions are added to the final plan of operations that are responsive to the National Environmental Policy Act analysis results.

The forest plan complies with the National Environmental Policy Act as shown in the "Minerals" section of chapter 2, desired conditions:

> "All mineral exploration and mining activities are operating in environmentally sound ways through protection and mitigation measures, including adequate post-mining reclamation assurances, to minimize environmental impacts to other National Forest resources. Abandoned and inactive mines disturbed by past mineral exploration and mine development have been returned to stable conditions and an appropriate, functioning, vegetative state, and do not pose health, safety, or environmental hazards. Mine reclamation should use a geomorphic approach that results in landforms similar to adjacent natural terrain and hydrologic functions similar to natural systems to minimize long-term monitoring and maintenance requirements".

The "Minerals" section also has the following guideline:

> "Mining activities should incorporate reclamation measures that reduce contrasts with the surrounding landscapes".

The forest plan not only follows pertinent statute but also follows the direction of Forest Service regulations at 36 CFR 228, part A, and the 2810 section of the forest service manual. This direction specifies National Environmental Policy Act analysis will be done prior to approval of locatable minerals operations, operations will be reclaimed, and reclamation will assured through bonding.

Concern Statement: The Forest Service should acknowledge that the economic value of the Mount Graham Recommended Wilderness Area is not just dependent on the mineral resources. (32.01)

Response: Chapter 3 of the environmental impact statement in the "Mineral Resources" section under the "No Action Alternative, Locatable Minerals," describes the economic effect of

withdrawing the Mount Graham Recommended Wilderness Area from mineral entry, if designated. This section focuses specifically on the economic effects of such a withdrawal to mineral resources and not on other Coronado National Forest resources. This section was updated to clarify that the economic effects are only referring to mineral resources. For more information regarding the effects on the Mount Graham Recommended Wilderness Area, see chapter 3 of the environmental impact statement, "Wilderness and Other Special Areas" section. While not explained in strictly economic terms, the effects of wilderness designation on goods and services available to the public are disclosed in chapter 3. For instance, the designation of an area as wilderness would limit mechanized vegetation treatments that could yield marketable wood products but would increase the nonmarket values of additional primitive recreational opportunities, protection of forest resources, or both.

Concern Statement: The Forest Service should define the standards for "reasonable protection of surface resources," "environmentally sound," and "the extent practicable" when making decisions about mineral extraction. (32.18, 32.44)

Response: The desired conditions in the forest plan for "environmentally sound" mineral development are agency policy provided by Forest Service Manual 2802 to "Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner and that these activities are integrated with the planning and management of other National Forest resources." The statements for "the extent practicable" and "reasonable protection of surface resources" are described in Federal regulations for locatable minerals under 36 CFR 228, subpart A. In general, the definitions of these statements may vary, and are dependent on a site-specific project.

Concern Statement: The Forest Service should include guidelines requiring Surface Use Determinations and coordination with BLM on mining proposals to perform validity exams. (32.23, 32.41)

Response: The requirements for conducting surface use determinations and validity exams are not a forest plan decision. The Forest Service directives regarding validity exams can be found in Forest Service Manual 2814.11 and directives regarding surface use determinations can be found in Forest Service Manual 2817.03a.

Concern Statement: The Forest Service should analyze the effects from closed or abandoned mines and whether the increased interest in locatable, leasable, or salable mining is long-term or short-term since mining has historically been a cyclical industry and mining creates conditions where environmental contamination occurs. (32.02, 32.28, 32.36)

Response: The environmental effects of closing or remediating abandoned mines are project-specific and analyzed at the project level on a case-by-case basis. However, the effects of closing and remediating abandoned mines across the landscape are described in chapter 3 of the environmental impact statement under the "Mineral Resources" section. Level of interest in mineral-related activities, including locatable, leasable, and salable minerals, is not within the scope of the forest plan.

Concern Statement: The Forest Service should identify areas that are incompatible with mining, target acquisition of mining claims in those areas because of their outstanding biological, cultural, recreational, scenic, and other resource values to protect the forest from the consequences of open pit mining. (32.09, 32.21, 32.32)

Response: Several special management areas and land use zones are designated in the forest plan for their unique resources, such as biological, cultural, recreational, or other characteristics. Desired conditions, objectives, standards, and guidelines are established for each of these areas, as well as individual resources in the forest plan. Proposed projects, including mineral projects, must be consistent with these forest plan components. The forest plan does not modify mineral rights. Mineral rights are established by law, and therefore are outside the scope of the forest plan. Acquiring mining claims is not within the authority of the Forest Service. Future projects and activities, of any kind, must be consistent with various laws, agency policy and direction, and the forest plan.

Concern Statement: The Forest Service should revise the guidelines for reclamation and closure outcomes when mining is permitted to comply with the Organic Administration Act of 1897. (32.22, 32.28)

Response The minerals guidelines were not modified. The intent of the minerals guidelines is to reduce impacts to resources. Compliance with laws, including the Organic Administration Act, is not a forest plan component but a requirement of the agency, regardless of the land management plan in effect.

Concern Statement: The Forest Service should remove the mining standard relating to permanent structures because it is not consistent with the Mining and Minerals Policy Act. (32.14)

Response: This standard was not modified as it does not restrict permanent structures considered reasonably incident to approved mineral operations. This standard is consistent with law, policy, and regulation for minerals management as listed in forest plan appendix E, “Other Sources of Information” under “Minerals.” This standard is also consistent with the Mining and Minerals Policy Act, which directs the Federal Government to foster and encourage private enterprise in the development of economically sound and stable domestic mining and minerals industries and the orderly and economic development of domestic mineral resources.

Concern Statement: The Forest Service should analyze the economic costs and benefits from permitting mining, such as Rosemont, the Rosemont mine will likely have some adverse economic effects, and include the amenity value of the forest. (32.27, 42.02)

Response: The effects of individual mining projects (including the Rosemont Mine) are project-specific and not within the scope of the forest plan. Economic impacts of mining in the plan area, as a whole, are described in chapter 3 under the “Economic Conditions and Trends” section of the environmental impact statement. The project-specific economic analysis for the Rosemont Mine and related documents can be found at www.rosemonteis.us.

Concern Statement: The Forest Service should analyze the effects of mineral extraction as it relates to surface disturbance, municipal water supplies, and climate change and the amount of carbon released. (32.26, 32.39, 32.40, 31.01, 52.03)

Response: Mineral extraction activities and their effect on resources are project-specific and not a plan-level decision. However, impacts of mineral activities in the plan area, as a whole, are described in chapter 3 under the “Mineral Resources” section of the environmental impact statement. The environmental effects of mineral extraction are analyzed at the project level on a case-by-case basis.

Concern Statement: The Forest Service should prohibit open pit mining or extraction activities, such as Rosemont Mine, that scars the land to preserve the long-term ecological and economical sustainability of the region. (32.45, 32.24, 42.04, 52.02, 52.04)

Response: The forest plan contains standards and guidelines aimed at minimizing adverse impacts from mineral extraction and mining activities on sensitive forest resources. Most of the guidance for mining is governed by law, regulation, and policy, which are outside of the scope of the forest plan as described in chapter 3 of the environmental impact statement. The Coronado National Forest follows the National Environmental Policy Act process in permitting new mineral extraction and mining activities, and all individuals have equal standing and opportunity to comment on projects and raise issues about the potential effects of mineral extraction and mining activities.

Concern Statement: The Forest Service should remove the guideline related to mining reclamation measures that reduce contrasts with surrounding landscapes because it is inconsistent with existing Forest Service regulations and could result in larger areas of disturbance. (32.13, 32.13)

Response: This guideline is intended to help naturalize the landscape during reclamation activities. Specific reclamation measures to reduce contrast with surrounding landscapes will be developed at the project level on a case-by-case basis to meet this guideline, which is consistent with current regulation.

Concern Statement: The Forest Service should clarify how desired conditions for mineral activities will be met, their relationship to current laws, and how they will be met for Rosemont Mine. (32.04, 32.30)

Response: Most of the guidance for mining is governed by law, regulation, and policy, which are outside of the scope of the forest plan as described in chapter 3 of the environmental impact statement. Projects must be consistent with the forest plan in effect at the time the project decision is made. The Rosemont project, with its plan amendment, was consistent with the 1986 forest plan, which was in effect at the time of the project decision. There is no requirement to revisit project decisions made under a previous forest plan, when a new revised forest plan goes into effect. That said, the revised plan will be reviewed and potential adjustments may be made via a plan amendment to ensure consistency between the Rosemont project and revised forest plan if any adjustments are felt to be warranted. The consistency of the Rosemont project with the 1986 forest plan is described in the project-specific analysis at http://www.rosemonteis.us.

Concern Statement: The Forest Service should clarify the extent to which mining cannot be restricted on the forest, how it is outside the scope of forest planning, and how the effects will be managed and mitigated, and whether the extent of potential impacts from mining can affect the decision. (32.06, 32.15, 32.08)

Response: Most of the guidance for mining is governed by law, regulation, and policy, which is outside of the scope of the forest plan, as described in chapter 3 of the environmental impact statement. The Coronado National Forest follows the National Environmental Policy Act process in permitting new mineral extraction and mining activities, and all individuals have equal standing and opportunity to comment on projects and raise issues about the potential effects of mineral extraction and mining activities.

In most locatable minerals operations, the Forest Service does not have the legal discretion to deny a proposal to explore for and remove the minerals. Locatable minerals include minerals that do not commonly form ore deposits, such as metals. The Forest Service does have the legal discretion to deny disposal of salable minerals, such as sand and gravel and common building stone. It also has some discretion over the conditions under which leasable minerals, such as oil, gas, and coal are disposed of.

Whenever a proposal is being considered and analyzed, comments received through the National Environmental Policy Act process are utilized to develop alternatives and mitigation to minimize the impact of mineral exploration, development and extraction on other resources. Conditions to the mineral operation, including for reclamation, will be added to the final approval, and compliance will be assured through measurements and reclamation bonding.

Forest plan desired conditions for mineral operations will be considered in each analysis and will be met so far as pertinent statute and regulations allow. In situations where the Forest Service does not have the discretion to deny a proposed operation, or modify it to completely meet desired conditions, an amendment to the forest plan will be considered.

Concern Statement: The Forest Service should revise the text related to the authority to deny mineral activities to emphasize support for multiple use and give greater weight to developing mineral resources. (32.25, 32.31)

Response: Most of the guidance for mining is governed by law, regulation, and policy, which are outside of the scope of the forest plan as described in chapter 3 of the environmental impact statement. Future projects and activities, of any kind, must be consistent with the forest plan and various laws, agency policy, and direction to manage vegetation and natural resources for multiple uses, all of which provide resource outputs for human society, either directly or indirectly.

In most locatable minerals operations, the Forest Service does not have the legal discretion to deny a proposal to explore for and remove the minerals. Locatable minerals include minerals that do not commonly form ore deposits, such as metals. The Forest Service does have the legal discretion to deny disposal of salable minerals, such as sand and gravel and common building stone. It also has some discretion over the conditions under which leasable minerals, such as oil, gas, and coal, are disposed of.

Whenever a proposal is being considered and analyzed, comments received through the National Environmental Policy Act process are utilized to develop alternatives and mitigation to minimize the impact of mineral exploration, development and extraction on other resources. Conditions to the mineral operation, including for reclamation, will be added to the final approval, and compliance will be assured through measurements and reclamation bonding.

Concern Statement: The Forest Service should acknowledge that they have discretion to deny mining, to provide a more realistic description of the agency's responsibilities, if the mine does not minimize impacts, and if the mining activities do not follow all other laws, regulations, treaties, and executive orders that protect public land resources. (32.37)

Response: The Forest Service regulatory framework related to mineral resources is described in chapter 3 of the environmental impact statement under “Mineral Resources.” Laws and regulations are not forest plan-level decisions. Project-level consistency with them is an agency

requirement as outlined in each individual statute, regardless of the land management plan in effect.

Concern Statement: The Forest Service should clarify that environmentally sound procedures are used on all existing mineral exploration and mining activities to be consistent with other language under "desired conditions." (32.05)

Response: As stated in the "Minerals" section of chapter 2, "Forestwide Management" of the plan, it is Forest Service policy to support responsible, environmentally sound energy and mineral development and reclamation on the Coronado National Forest.

Concern Statement: The Forest Service should provide additional detail about how mining activities may affect management goals, including preservation of open space, protection of sensitive species and riparian habitat, ecosystem restoration and resiliency, and regional air quality and visibility goals. (32.35)

Response: The effect of proposed mining activities on management goals, including preservation of open space, protection of sensitive species and riparian habitat, ecosystem restoration and resiliency, and regional air quality and visibility goals, are analyzed at the project level on a case-by-case basis. However, impacts of mineral activities on these resources in the plan area are described in chapter 3 under the "Mineral Resources" section of the environmental impact statement. The effects of mining activities are project specific and are not described in the forest plan.

Concern Statement: The Forest Service should describe how the resource management direction related to riparian areas would protect resources affected by mining, including effects from the Rosemont Mine. (32.19)

Response: Desired conditions, objectives, and guidelines for riparian areas are described in chapter 2 of the forest plan. Any proposed project, including mining, must be consistent with these plan components. Projects must be consistent with the forest plan in effect at the time the project decision is made. The Rosemont project, with its plan amendment, was consistent with the 1986 forest plan, which was in effect at the time of the project decision. There is no requirement to revisit project decisions made under a previous forest plan, when a new revised forest plan goes into effect. That said, the revised plan will be reviewed and potential adjustments may be made via a plan amendment to ensure consistency between the Rosemont project and revised forest plan if any adjustments are felt to be warranted. Project-specific environmental analysis and related documents for the Rosemont project can be found at http://www.rosemonteis.us.

Concern Statement: The Forest Service should provide additional data supporting the assertion that abandoned mines do not pose a threat to water quality. (32.34)

Response: This comment regarding abandoned mines is in reference to desired conditions in the forest plan, not existing conditions. Language from the desired conditions section under the "Minerals" heading in chapter 2 of the plan states:

> "[a]bandoned and inactive mines disturbed by past mineral exploration and mine development have been returned to stable conditions . . . and do not pose health, safety, or environmental hazards,"

As desired conditions, these are aspirations and additional data are not available. The full definition of the desired conditions plan component can be found in chapter 1 under the "Forest Plan Content" section.

Water quality is an important forest resource parameter. The forest plan has a number of desired conditions, guidelines, and management approaches relating to water resources:

- Desired Conditions under Watershed – Water quality meets Arizona and New Mexico water quality standards and supports designated beneficial uses and native and desired nonnative aquatic species.
- Guideline under Natural Water Sources – Water quality, quantity, soil function and structure, and wildlife habitat (including aquatic species habitat) should be protected or enhanced at natural springs and seeps.
- Management Approaches under Natural Water Sources – Implementing total maximum daily load plans to enable the Coronado to meet or exceed State of Arizona, State of New Mexico, or Environmental Protection Agency water quality standards for designated uses.

Concern Statement: The Forest Service should clarify why locatable minerals seem to be treated differently than leasable and salable minerals. (32.29)

Response: Management of locatable mineral resources on National Forest System lands are governed by specific laws, regulations, and policies as described in chapter 3 of the environmental impact statement under the "Mineral Resources" section. These statutes and directives are, in most cases, different than those governing leasable and salable mineral resources; therefore, the forest management of these resources also differs.

Concern Statement: The Forest Service should reconsider the standards and guidelines for mining because their implementation would be unduly burdensome and expensive, and because they are not sufficiently comprehensive, and will not result in the described desired conditions. The Forest Service should include standards to protect water resources and sensitive plant and animal habitat, to require scrutiny of open pit mining, and to outline areas that should be withdrawn because they are not economically feasible for open pit mining. (32.11)

Response: Desired conditions, objectives, and guidelines for resources managed by the Forest Service, such as water resources, plant and animal habitat, are described in chapter 2 of the forest plan. Standards and guidelines are purposely created to move toward desired conditions. Any proposed project, including mining, must be consistent with these plan components. Desired conditions, standards, and guidelines for mineral resources were developed for the forest plan using the best available science (see the analysis results and literature citations in the plan, environmental impact statement, and supporting plan record of documents). Forest Service policy also requires interdisciplinary specialists to use the best available science for their analyses at the project level, to inform the deciding official.

The Forest Service direction for withdrawals is outlined in Forest Service Manual 2760. Generally, a withdrawal is a management tool for withholding an area of National Forest System land from settlement, sale, location, or entry under some or all of the general land laws, including the mining and mineral leasing law, for the purposes of limiting activities under those laws in order to maintain other public values in the area, or reserving the area for a particular public purpose or program. These programs and purposes may include quality of scientific, scenic, historical, ecological, environmental, air, water resource, archaeological values, or other special

purposes. Before recommending an administrative withdrawal for a certain area, the Forest Service must comply with the requirements under 43 CFR 2310.1-2 for consideration of alternative protection opportunities such as a right-of-way under section 507 of the regulations (43 U.S.C. 1767) or a cooperative agreement under sections 302(b) (43 U.S.C. 1732(b)) and 307(b) (43 U.S.C. 1737(b)) of the regulations, or other protection methods. These requirements are restated in the forest plan as guidelines under chapter 2 in the "Land Ownership Adjustments and Boundary Management" section.

Concern Statement: The Forest Service should identify all acts that modify the mining laws as applied to local areas. And identify how they protect National Forests from becoming mining districts. (32.20)

Response: During the development of the plan, the intent was not to repeat law, regulation, or policy. References to relevant laws, regulations, or policies related to minerals are listed in appendix E "Other Sources of Information" of the plan. Future minerals projects and activities, of any kind, must be consistent with the forest plan and various laws, agency policy, and direction to manage vegetation and natural resources for multiple uses.

Concern Statement: The Forest Service should clarify how the plan will protect surface resources if it can be modified to allow destructive mining projects. (32.03)

Response: Desired conditions, standards, and guidelines for mineral resources were developed and included in the forest plan to minimize adverse impacts from mineral activities on sensitive forest resources (see chapter 2 of the forest plan). The effects of specific proposed mining activities on surface resources are analyzed at the project-level on a case-by-case basis and are not described in the forest plan. Requirements for revisions and amendments to a forest plan are found in Forest Service Manual 1921.3 and 1926.5, respectively

Concern Statement: The Forest Service should analyze the impacts of adding Wild Backcountry and Scenic Resource areas on valid existing rights because this zoning will affect the mining claims and private in-holdings in these areas. (32.17)

Response: The designation of Wild Backcountry Land Use Zones will have no effect on mineral rights. Most of the guidance for minerals activities is governed by law, regulation, and policy, which are outside of the scope of the forest plan as described in chapter 3 of the environmental impact statement. The desired conditions and guidelines for the Wild Backcountry Land Use Zone are described in chapter 3 of the forest plan under the "Land Use Zones" section. The desired conditions and guidelines do not restrict minerals-related activities. No scenic resource areas are being proposed in the forest plan.

Concern Statement: The Forest Service should acknowledge the long-term value of wilderness is worth more than the short-term value from mineral extraction. (32.43)

Response: All National Forest System lands determined to meet wilderness capability requirements are considered potentially available for wilderness designation. However, the determination of availability is conditioned by the value of and need for the wilderness resource compared to the value of and need for other resources (see 2007 Forest Service Handbook 1909.12 chapter 72.2). The availability of an area for wilderness designation is based on the tradeoffs involved in managing the area for wilderness character versus current and potential future uses, including mineral resources. Refer to the Potential Wilderness Area Evaluation

Report for more detailed information and analysis of the potential wilderness areas considered for recommendation in the forest plan.

Concern Statement: The Forest Service should acknowledge that there are several reasonably foreseeable mining actions on the horizon. (32.42)

Response: Mineral activities and their effect on resources are project-specific and not a plan-level decision. The environmental effects of mineral extraction are analyzed at the project level on a case-by-case basis. A list of these proposed projects currently being analyzed can be found on the latest Coronado National Forest schedule of proposed actions.

Concern Statement: The Forest Service should acknowledge that taxpayers are subsidizing mineral extraction activities. (32.16)

Response: As a Federal agency, the Forest Service is funded by the Federal Government to manage natural resources-related activities on National Forest System lands, including mineral-related activities; however, agency funding is outside the scope of the forest plan.

Concern Statement: The Forest Service should clarify the mechanisms proposed for managing and monitoring mineral ventures to avoid costly delays and encourage exploration and mining activities and how it plans to encourage mineral exploration and development. (32.07)

Response: While the forest plan provides some guidance for management of mineral-related activities, most of the guidance is governed by law, regulation, and policy which is outside of the scope of the forest plan, as described in chapter 3 of the environmental impact statement. During the development of the plan, the intent was not to repeat law, regulation, or policy. Those relevant laws, regulations, or policies are listed in appendix E, “Other Sources of Information” of the plan. While the Forest Service manages some mineral related activities, it does not typically encourage or promote them.

Proposed Mines (42)

Concern Statement: The Forest Service should more accurately describe the nature and effects of the Rosemont Mine and whether the forest plan affects the mine. (42.03, 42.05)

Response: Projects must be consistent with the forest plan in effect at the time the project decision is made. The Rosemont project, with its plan amendment, was consistent with the 1986 forest plan, which was in effect at the time of the project decision. There is no requirement to revisit project decisions made under a previous forest plan, when a new revised forest plan goes into effect. That said, the revised plan will be reviewed and potential adjustments may be made via a plan amendment to ensure consistency between the Rosemont project and revised forest plan if any adjustments are felt to be warranted. The project-specific environmental analysis, including consistency with the 1986 forest plan, and any forest plan amendments, can be found at http://www.rosemonteis.us.

Concern Statement: The Forest Service should recognize the pending amendment to the existing land and resource management plan that would facilitate construction and operation of the Rosemont mine to avoid administrative issues. (42.01)

Response: Projects must be consistent with the forest plan in effect at the time the project decision is made. The Rosemont project, with its plan amendment, was consistent with the 1986 forest plan, which was in effect at the time of the project decision. There is no requirement to

revisit project decisions made under a previous forest plan, when a new revised forest plan goes into effect. That said, the revised plan will be reviewed and potential adjustments may be made via a plan amendment to ensure consistency between the Rosemont project and revised forest plan if any adjustments are felt to be warranted. The amendment to the 1986 forest plan related to the Rosemont project is project-specific and included in the project-level analysis. Project-specific environmental analysis and related documents for the Rosemont project can be found at http://www.rosemonteis.us.

Concern Statement: The Forest Service should explain why the environmental impact statement indicates that pollutant emissions will be calculated during site-specific review, but the Rosemont Mine environmental impact statement claimed there was insufficient data to quantify emissions. (42.06)

Response: The effects of the Rosemont project are project-specific and not within the scope of the forest plan. Information regarding the Rosemont project can be found at http://www.rosemonteis.us.

Saleable Minerals (52)

Concern Statement: The Planning Rule is the national model for the development of forest plans, and as such, should be followed in the Coronado National Forest (CNF) Plan. The CNF plan should not include hard rock mining because the Planning Rule does not address this resource use. (52)

Response: The forest plan is mandated by the National Forest Management Act NFMA and the 1982 Planning Rule to address multiple resource use on the Coronado National Forest, including mining. In the case of this forest plan, the minerals include locatables, saleables, and potentially, leasables. Management of locatable mineral resources follows the General Mining Law of 1872, as amended, which means the Forest Service does not have the discretion to deny most locatable mineral mining and exploration proposals, once the proposed action is modified to address issues identified through National Environmental Policy Act analysis. Although the agency has greater discretion in saleables and leasables disposal and surface management, we still have to follow national direction and policy to consider exploration and extraction of these minerals. As such, it is reasonable to address mineral resource use and management in the forest plan.

Concern Statement: The Forest Service should be handling National Environmental Policy Act compliance for hardrock mines to ensure that coordination with cooperating agencies is handled properly. (52.01)

Response: Coordination efforts with cooperating agencies during the project-specific National Environmental Policy Act analysis is considered at the project-level and is not a plan-level decision.

Fire and Fuels Management (20)

Concern Statement: The Forest Service should disclose the implications of climate change on wildland fire, fire danger and management options including the potential for large-scale, high-intensity fires. (20.08, 20.14)

Response: Climate change is addressed in "Forestwide Management" in chapter 2 of the forest plan and chapter 3 of the environmental impact statement. Appendix A of the plan also outlines the potential implications of climate change to the Coronado National Forest, which consist of a:

- projected increase in frequency of extreme weather events;
- projected increase in wildfire risk;
- projected increase in outbreaks of insect, diseases and nonnative invasive species;
- projected increase in demand for decreasing upland water supplies; and
- projected increase in national forest socioeconomic uses and demands.

Appendix A includes climate change effects on natural ecological processes, including wildfire, and outlines five potential strategies for management:

- Enhance adaptation by anticipating and planning for disturbances from intense storms
- Use a suite of adaptation options to manage ecosystems in the face of uncertainty
- Increase water conservation and plan for reductions in upland water supplies
- Anticipate increase in forest recreation use
- Monitor climate change influences and the effectiveness of adaptation approaches

Current scientific information regarding the effects of climate change on forest resources is incorporated in the revised forest plan. It is presented as a general description of anticipated changes in conditions as they are known to a reasonable level of certainty. It also outlines desired conditions for all vegetation communities to promote their increasing resiliency and adaptation capacity to changing conditions and other stressors, such as extended drought and warmer temperatures, which are projected to occur in the Southwest relating to climate change.

Concern Statement: The Forest Service should address how to limit the destruction from fires and resulting erosion and add restoration after fires to the management approaches. (20.03, 20.18)

Response: Limiting the destruction from wildfires is discussed throughout the plan in response to the need for change topic of “Ecosystem Restoration and Resiliency.” Forestwide desired conditions, as well as specific desired conditions for each vegetation community, describe conditions in which fire occurs in a natural role. Objectives provide actions to move towards desired conditions which include more natural fire regimes to help limit uncharacteristic fire effects. Restoration after fires will be determined at the project level on a case-by-case basis after each wildfire. Other post-wildfire programs address suppression damage; post-fire rehabilitation, restoration, and recovery (Forest Service Manual 2030); and nonfire emergency response.

Concern Statement: The Forest Service should prohibit vehicular access to remote areas and prohibit open fires during fire season to reduce the incidence of illegal fires. (20.05, 20.07)

Response: Prohibiting vehicle access and open fires during fire season is not a plan-level decision. This type of action is covered under the “Southeast Arizona Restriction Coordination Area Interagency Fire Restrictions and Closure Operating Plan.”

Concern Statement: The Forest Service should improve the management of the forest related to fire to address the variety of circumstances that exist in the forest. (20.02, 20.04)

Response: The intent of the revised plan is to improve the overall management of the forest including fire. Please review the "Wildland-Urban Interface," "Air" and "Cultural Resources" sections of the plan for additional fire management information relevant to the aforementioned themes. We developed the plan using the best available science (see the analysis results and literature citations in the plan and environmental impact statement, other sources of information forest plan appendix E under "Fire Management" and in the supporting project record of documents).

Concern Statement: The Forest Service should identify an official fire season for clarity and to develop habit and avoid spending money on large fires. (20.10, 20.19)

Response: These comments are outside the scope of the forest plan. Although statistics exist to help determine a "fire season," this can vary from year to year depending on weather and fire occurrence. Other documents ("Southeast Zone Interagency National Fire Danger Operating Plan") discuss potential fire season characteristics. Large fires need to be managed in some manner as dictated by policies outside the scope of the forest plan decision.

Concern Statement: The Forest Service should address the increasing number of unnatural fires, acknowledge that campgrounds are a significant source of fire danger, and determine how to distinguish between natural and unnatural fires. (20.01, 20.16)

Response: While the plan provides guidance for managing planned and unplanned ignitions, addressing the issue of increases in "unnatural" or human-caused fires is covered in other documents (Fire Prevention Plan, Fire Management Plan, Southeast Zone Interagency Restrictions and Closure Plan, Southeast Zone Interagency National Fire Danger Operating Plan) and is outside the scope of the forest plan decision. The determination of fire cause is a standard practice and Forest Service policy that occurs with every fire.

Concern Statement: The Forest Service should increase fines for illegal fires and ban repeat offenders. (20.12)

Response: Laws, regulations, and their enforcement are not forest plan-level decisions. Enforcement is not a forest plan component but is a requirement of the agency, regardless of the land management plan in effect.

Concern Statement: The Forest Service should reconsider preventing fires in nonadapted desert communities, and provide justification for the approach. (20.15)

Response: Neither the plan nor the environmental impact statement include a management approach for preventing fire in desert communities. However, the environmental impact statement analysis provides information on the nonfire-adapted characteristics of the desert communities and the plan provides guidance (chapter 2," Forestwide Management," "Desert Communities") for managing this ecosystem, including limiting the use of wildland fire.

Concern Statement: The Forest Service should acknowledge that the safety of firefighters cannot be a coequal goal with the safety of the public. (20.17)

Response: This standard was included in the revised plan to reflect the 2001 Federal Wildland Fire Management Policy that "Firefighter and public safety are the first priority in every fire management activity." This plan standard does not imply firefighter safety and public safety can

all be "maximized" on every incident but rather a balance must be found, with priority given to firefighter and public safety.

Concern Statement: The Forest Service should ensure that critical routes remain open during fire emergencies to provide access for fire fighters and egress for evacuees. (20.09)

Response: Road access during fire emergencies is not a plan-level decision. Road access during fire emergencies will be determined on a case-by-case basis depending on the circumstances at the time.

Concern Statement: The Forest Service should define "unplanned ignition" and determine the situations under which unplanned ignition would be allowed to continue. (20.06)

Response: "Unplanned ignition" is defined in the glossary of the plan under "Wildfire" as follows:

> Wildfire: An unplanned ignition caused by lightning, volcanoes, unauthorized and accidental human-caused actions, and escaped prescribed fires (synonym: unplanned ignition).

The forest plan does not direct suppression or management of unplanned ignitions. The Coronado National Forest's annual fire management plan provides the operational parameters whereby fire managers implement decisions at that level of detail. The fire management plan describes fire management strategies, tactics, and alternatives for fire management units, including when to let unplanned ignitions continue. The specific strategies chosen for the management of wildfires includes interdisciplinary input to assess site-specific values to be protected. Incident objectives and courses of action are developed to enhance or protect those values.

Concern Statement: The Forest Service should include landscape-scale fire planning in the plan that implements the Galiuro FireScape. (20.11)

Response: While the plan provides some guidance for landscape-scale fire planning, (chapter 2, "Wildland-urban Interface," management approaches), the Galiuro FireScape is a project-level decision and is outside the scope of the forest plan decision.

Concern Statement: The Forest Service should not add an additional layer of management in the Cave Creek Birds of Prey Zoological-Botanical Area to deal with fire threat because additional management will not affect the fire threat. (20.13)

Response: The proposal to add the Cave Creek Canyon Bird of Prey Zoological Area is not driven by fire threat and is not meant to alter the impact that fire has on this area. Fire management in this proposed zoological-botanical area will be consistent with the objectives for forestwide vegetation communities and resources.

Fuel Treatment, Reduction (21)

Concern Statement: The Forest Service should clarify how fuels reduction will be accomplished given the limited funding available and provide for contingency plans if funding is not available (e.g., fuel treatment of the Pinaleño Ecosystem Management Area, as provided for in the draft plan). (21.02, 21.03)

Response: The objectives in the forest plan were developed to be realistic and able to be implemented with anticipated future budgets (expected to be similar to current budgets). Chapter

1 of the plan acknowledges that "Variation in achieving objectives may occur during the next 15 years because of changes in environmental conditions, available budgets, and other factors." Objectives are strongly influenced by recent trends, past experiences, and anticipated staffing levels and short-term budgets. Allocation of funds is outside the scope of the plan.

Concern Statement: The Forest Service should clarify when and how areas will be treated for fuel reduction and should not use fire as a restoration tool in certain vegetation communities. (21.01)

Response: The forest plan is strategic in nature and does not include project and activity decisions. The objectives of the forest plan as they relate to "treatments" are based on the timeframe of every 10 years and the "how" is included in the objectives (i.e., wildland fire, prescribed cutting, mastication, or herbicides). Wildland fire is only considered as a viable tool in those vegetation communities that are fire adapted and have historically evolved with fire, including Madrean encinal woodland, grassland, interior chaparral, Madrean pine-oak woodland, mixed conifer, and ponderosa pine-evergreen oak. For desert communities, the forest plan includes a guideline that states "Wildland fire should not be used as a management activity, except as a strategy to control invasive vegetation."

Concern Statement: The Forest Service should develop fire management standards and guidelines requiring analysis of spatial dimensions of local fire regimes to address the issue of slope and local topography in fire behavior. (21.04)

Response: This level of analysis is not conducted for a programmatic forest plan level decision. It is completed during project planning and the specific factors listed would be addressed there. Spatial fire behavior modeling is commonly used at the project level to inform decision making when planning and managing wildland fire at the project level.

Concern Statement: The Forest Service should provide more information on the impact of snags and coarse woody debris on fires. (21.05)

Response: The desired conditions for woodland and forested vegetation communities include "well-distributed snags and coarse woody debris." The desired conditions for these vegetation communities were developed using the best available science and supporting documents including the Mexican Spotted Owl Recovery Plan (2012). Snags and coarse woody debris are constituent elements related to Mexican spotted owl habitat and coincide with the historic structure of these vegetation communities under a more natural fire regime. The distribution of snags and coarse woody debris as described in the desired conditions of the forest and woodland vegetation communities will promote characteristic fire behavior and intensities rather than uncharacteristic fire impacts.

Concern Statement: The Forest Service should analyze the effect of slash fuels and treatment options on fire hazard and ecosystem resilience, and prioritize fuel treatments at locations where relatively little resource investment may create fire resistant conditions most efficiently. (21.06)

Response: This is outside the scope of the forest plan. This level of analysis is completed during project planning and the specific factors listed would be addressed there. The Coronado is not considered a commercial timber-producing national forest and therefore does not manage large-scale timber sales. Slash fuels produced from project-level activities such as prescribed cutting are either removed through fuelwood sales, piled and burned on site, or lopped and scattered, leaving little residual fuel loading that would affect fire hazard.

Prescribed Burns (40)

Concern Statement: The Forest Service should use prescribed fire because it helps reduce large-scale fires. (40)

Response: Throughout the environmental impact statement, wildland fire (planned and unplanned ignitions) and natural disturbances are identified and evaluated as a means to attain vegetation desired conditions as identified in chapter 2 of the revised plan. The Coronado is not considered a commercial timber-producing forest and therefore does not manage large scale timber sales. Slash fuels produced from project level activities, such as prescribed cutting, are either removed through fuelwood sales, piled and burned on site, or lopped and scattered, leaving little residual fuel loading that would affect fire hazard.

Concern Statement: The Forest Service should use techniques that mimic natural disturbance caused by fire, insects, or pathogens, including prescribed burning. (40.01, 40.04)

Response: Throughout the environmental impact statement, wildland fire (planned and unplanned ignitions) and natural disturbances are identified and evaluated as a means to attain vegetation desired conditions, as identified in chapter 2 of the revised plan.

Concern Statement: The Forest Service should allow prescribed fire in wilderness areas to reverse the effects of years of over-aggressive fire suppression. (40.02)

Response: The plan does allow prescribed fire in designated and recommended wilderness areas. Plan components that describe prescribed fire in wilderness can be found in chapter 3, in "Plan Components for All Designated Wilderness Areas," "Fire in Wilderness." Guideline 2 supports the use of prescribed fire in wilderness.

Concern Statement: The Forest Service should consider and disclose the effects of using prescribed fire. To reduce risk, provide ecosystem services, and regulate greenhouse gas emissions. (40.03)

Response: The "Vegetation Communities," "Fuels and Fire" sections in chapter 3 of the environmental impact statement discuss the application of planned and unplanned ignitions on the landscape. It compares the existing vegetation condition class by alternative to determine the progress of moving toward desired conditions. It also outlines its emphasis of treatments near wildland-urban interface, thus reducing the hazards from uncharacteristic wildfires. Other sections in chapter 3 (e.g., "Soils," "Water Resources," "Species Diversity and Viability") describe the effect of fire on resources that provide ecosystem services. As discussed in the "Air Quality" section, limits to smoke emissions (including greenhouse gases such as carbon dioxide) from prescribed fires and wildfires are imposed by the Arizona Department of Environmental Quality.

Suppression (57)

Concern Statement: The Forest Service should clarify that protection of cultural and biological values is of higher value than protection of structures (including University of Arizona equipment), when it comes to firefighting on the Coronado (especially Pinaleño Mountains). (57.01, 57.02)

Response: In response to protecting values from fire, the forest plan reflects the 2001 Federal Wildland Fire Management Policy that "Firefighter and public safety are the first priority in every

fire management activity." The plan also reflects the 2009 Guidance for the Implementation of the Federal Wildland Fire Management Policy, which lists nine guidelines, including:

> "Managers will use a decision support process to guide and document wildfire management decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions."

The forest plan does not imply protection of any one value is more important than the other, but rather a balance must be found between safety and cost, with priority given to firefighter and public safety.

Concern Statement: The Forest Service should switch to more natural fire management regimes, phasing out natural fire suppression because it is a waste of resources and counterproductive. (57.03, 57.04)

Response: The forest plan focuses on restoring natural fire regimes. In chapter 2 "Vegetation Communities," the desired conditions for the fire-adapted vegetation communities describe the natural fire regimes for each community. There will always be some level of active fire management during natural ignitions needed due to the values at risk (wildland-urban interface, threatened and endangered species, infrastructure, and other values). The Coronado National Forest's annual fire management plan provides the operational parameters whereby fire managers implement the decisions of the land management plan. The fire management plan describes fire management strategies, tactics, and alternatives for fire management units. The specific strategies chosen for the management of wildfires includes interdisciplinary input to assess site-specific values to be protected. Incident objectives and courses of action are developed to enhance or protect those values.

Wildland-urban Interface (61)

Concern Statement: The Forest Service should reconsider providing assistance to people who own property along the wildland-urban interface. (61.01)

Response: Providing assistance to people who own property along the wildland-urban interface is outside the scope of the forest plan. The forest plan only provides guidance for National forest System lands not adjacent lands. The plan does provide desired conditions and management approaches in chapter2, "Forestwide Management," "Wildland-Urban Interface" that support and encourage planning and cooperation across jurisdictional boundaries as stated in the 2001 Federal Wildland Fire Management Policy and The National Cohesive Wildland Fire Management Strategy.

Concern Statement: The Forest Service should ensure that the desired conditions related to the wildland-urban interface are not interpreted as a mandate to act in overly ambitious ways. (61.02)

Response: Desired conditions are aspirational and not considered to be mandates or commitments or final decisions to approve projects. See the explanation for desired conditions under chapter 1, "Introduction, Forest Plan Content".

Vegetation Management (59)

Concern Statement: The Forest Service should adopt the proposed plan for managing grasslands because it would improve the fire regime and improve habitat for grassland-dependent species. (59.01)

Response: We agree the forest plan's direction for the grassland communities facilitates the return to historical fire regime that would benefit grassland-dependent species.

Concern Statement: The Forest Service should include analysis of the rate of oak mortality on the forest and include management recommendations. (59.02)

Response: Management responses to specific mortality events are not a plan-level decision. These responses are specific to each event and will depend on specific tree species and mortality agents involved. Conditions to improve the overall health of the Coronado National Forest are addressed throughout the plan and are a primary aspiration of the desired conditions statements for each vegetation community in chapter 2 of the forest plan.

The Forest Service monitors forest insect and disease activity annually. This information is published in an annual Forest Insect and Disease Conditions report. Excessive tree mortality on the Coronado National Forest is investigated by local foresters and by forest health specialists from the Forest Service Arizona Forest Health Zone Office.

Concern Statement: The Forest Service should include standards to preserve, maintain and develop old growth forests and retain large trees. Old growth forests are valuable as research sites, carbon stores, climate change refugia, and wildlife habitat. Large trees are deficit across the landscape and are important to restoration efforts as large trees provide valuable habitat and are more resistant to fire. (59.03, 59.05, 59.18)

Response: Late-seral forests containing large trees are a primary component of the desired conditions and are addressed in the guidelines for the forest communities. Old growth is described in terms of forest structure and old growth components such as old trees, dead trees, downed wood, and structural diversity. The location of old growth shifts on the landscape over time as a result of tree growth and mortality. The definition of old growth can be found in the forest plan glossary.

In ponderosa pine-evergreen shrub and dry mixed-conifer forests, old growth is addressed as fine-scale structure; in wet mixed-confer and spruce-fir forests, old growth is addressed as stand- and forest-level structure. Peer-reviewed (Reynolds et al. 2013) reconstructed conditions for southwestern ponderosa pine and frequent-fire mixed conifer (dry mixed-conifer) indicate that old-growth structure was not historically found in large contiguous areas, but rather at finer scales across the landscape. A strategy to enhance the development of old-growth forests includes restoring the composition and structure of frequent-fire forests (ponderosa pine and dry mixed-conifer) so that they are less susceptible to large-scale severe wildfire and disease outbreaks that threaten trees reaching maturity (Reynolds et.al. 2013).

Concern Statement: The Forest Service should reconsider the standards allowing aquatic pesticides because they do not work and threaten Endangered Species Act-listed species. (59.04)

Response: If considered for treatment, pesticide use undergoes environmental analysis for potential impacts before it is used on a project-level basis. The guideline ISM-G-1 encourages the Coronado National Forest to remove invasive animals in aquatic habitat that supports native fish and other special-status aquatic species. Project-level analysis will determine how best to accomplish the goal of invasive species removal which may or may not include the use of aquatic pesticides. Such project-level analysis will comply with all applicable laws and regulations.

Concern Statement: The Forest Service should identify and manage for Canelos Ladies Tresses and Huachuca water umbel. The Forest Service should add giant saguaro, Arizona white oak, Mexican blue oak, alligator juniper, and ponderosa pine as management indicator species. (59.06, 59.07, 59.17)

Response: The forest plan includes guideline HUA-G-4, which recommends that ground-disturbing activities and vegetation management be designed to benefit or mitigate potential impacts to numerous special status plant species. While Canelo Hills ladies' tresses are not specifically mentioned, project design will certainly include this plant because of its Federal listing status. Additionally, guidelines intended to improve riparian, meadow, and aquatic habitat and protect aquatic, meadow, and riparian species will benefit this species (MOM-G-1, 2, WET-G-1).

Management indicator species were selected based on the criteria that their population changes are believed to indicate the effects of management activities being emphasized in the plan alternatives, so that the effects of each alternative on fish and wildlife populations can be estimated (Forest Service Manual2605 and 2620). Page 324 of the draft environmental impact statement explained the process for selecting management indicator species. The management indicator species selected were included in part for ease of monitoring as well as their value and indicator of ecosystem health. Other species were considered but not included in the list based on the evaluation criteria.

Concern Statement: The Forest Service should consider the effects of timber and fuelwood harvest, mechanical treatments, and forest roads on soil, and on wildlife populations and habitats. (59.08, 59.10, 59.21)

Response: The effects of timber and fuelwood harvest, mechanical treatments and forest roads as well as all other forest activities were assessed relative to threatened and endangered species in table 75 in chapter 3 of the environmental impact statement. In addition, the species viability also assessed these effects for Forest Service sensitive species and species of concern (chapter 3, "Species Diversity and Viability"). Vegetation management and National Forest System roads are also discussed in the "Soils" analysis in chapter 3 of the environmental impact statement.

Timber and fuelwood harvest, mechanical treatments, and National Forest System roads require site-specific analysis and are not analyzed at the level of the forest plan. If these types of projects are proposed, effects of the activities will be analyzed at the project level on a case-by-case basis.

Concern Statement: The Forest Service should not equate post-fire logging with ecological restoration or forest management objectives because salvage logging causes more environmental damage than it solves. (59.09)

Response: We agree salvage logging does not equate with ecological restoration; however, salvage is a specialized tool for achieving objectives related to desired conditions, public health and safety, and economics (see standard VFP-S-2 in the "Forest Products" section of chapter 2, "Forestwide Management" in the forest plan). Furthermore, post-fire salvage logging is not a forest plan-level decision. Salvage logging will be evaluated at the project level at a case-by-case basis.

Concern Statement: The Forest Service should establish criteria for active and passive restoration of forest vegetation. The Forest Service should include restoration and reseeding under management approaches for all projects. (59.11, 59.12)

Response: The forest plan promotes restoration through the desired condition statements and objectives for each vegetation community. The forest plan does not prescribe how criteria should be established or implementation should be accomplished. Those decisions are typically made at the project level. The best available science is used to help managers decide how to improve ecosystem resiliency through restoration treatments (Reynolds et al. 2013).

Similarly, the National Forest Management Act requires regeneration of trees (planting or seeding) within 5 years of the disturbance if natural regeneration does not occur; however, specific reforestation projects will be analyzed at the project level on a case-by-case basis at a future date. Post-fire reseeding is site-specific in accordance with burned area emergency response guidelines and forest service manual direction.

Concern Statement: The Forest Service should provide support for the claim that managed herbivory aids in sustaining or improving native vegetation cover and composition. (59.13)

Response: The effects of livestock grazing vary with timing, duration, and intensity. Negative effects of heavy grazing are well documented and include changes to vegetation structure and composition, soil structure, and water infiltration (Schussman and Smith 2006). An emerging research interest in the effects of well-managed grazing at light to moderate levels, as compared to grazing exclusion, has revealed benign or even beneficial effects to various rangeland ecosystem components or processes (Curtin 2008, Holechek 2004, Loeser et al. 2007, Sprinkle et al. 2007). Currently, stocking rates on the Coronado National Forest are light to moderate, which is consistent with sustaining rangeland native vegetation cover and composition (Holechek et al. 1999).

Concern Statement: The Forest Service should consider wider use of stewardship contracting as a tool for vegetation treatments because it reduces the costs of vegetation treatment. (59.14)

Response: The plan does not preclude the use of stewardship contracts as a vegetation management tool; stewardship contracting is encouraged as a management approach of the "Forest Products" section in chapter 2. To clarify that stewardship contracting is encouraged, this management approach has been changed to read:

> "Encouraging use of forest products through stewardship contracting in lieu of onsite burning or chipping."

Concern Statement: The Forest Service should explain how the plan will address vegetation conditions that are divergent from reference conditions and should include a description of the process for prioritizing vegetation treatments to ensure that the desired conditions can be met. (59.24, 59.15)

Response: The forest plan addresses vegetation conditions that are divergent from reference conditions through the plan objectives that describe treatments and treatment acres; these objectives can be found for each vegetation community in chapter 2 in the "Vegetation Communities" section. Objectives outline how the forest plan will move toward desired conditions, which, in most cases, mirror reference conditions.

Generally, vegetation treatments will be prioritized based on proximity to the wildland-urban interface, presence of invasive species, and high departure from desired conditions.

Concern Statement: The Forest Service should include a vegetation map to disclose the location and extent of plant communities. (59.16)

Response: The location and extent of vegetation communities are constantly shifting though time and space as disturbances impact communities. The tools used to measure and map vegetation communities are also evolving. We used a variety of vegetation maps to help develop the forest plan and environmental impact statement; these include Region 3 mid-scale mapping, potential natural vegetation type map, Integrated Lands Assessment Project maps, and LANDFIRE maps calibrated to local expertise. The management of specific areas is scale-dependent and will be assessed in project-level decisions; at the scale of the forest plan, maps provide a perspective on extent, acreage, and distribution, but project-level plans are more specific to location. A link to forest vegetation maps has been added to the plan under "Vegetation Communities - General Description".

Concern Statement: The Forest Service should reconsider the emphasis given to manzanita control because it does not appear to be necessary because manzanita is a native species and an important wildlife food source. (59.19)

Response: Manzanita control is discussed in the environmental impact statement as a past action that occurred under the 1986 plan; the revised forest plan does not promote manzanita control. Under the 1986 forest plan, treatments targeting manzanita occurred in the grassland, interior chaparral, and Madrean encinal woodland communities (see the environmental impact statement, chapter 3, "No Action" discussion of grassland, interior chaparral, Madrean encinal woodland, and Madrean pine-oak woodland). The revised forest plan includes manzanita as a desired species in grassland, interior chaparral, Madrean encinal woodland, and Madrean pine-oak woodland communities (forest plan, chapter 2, desired conditions for grassland, interior chaparral, Madrean encinal woodland, and Madrean pine-oak woodland).

Concern Statement: The Forest Service should revise the vegetation elements of the plan: to acknowledge that there is no significant die-off of border piñon in the Coronado; to correctly identify locally harvested plants; to remove careless weed from the plants desired to be widespread; to correct the spelling of *Pennisetum ciliare;* to clarify that low elevation communities may not be fire adapted; to add a desired condition for rare plants; to ensure that extirpated species are reintroduced in areas that are likely to remain suitable through climate change; and to ensure that snags are provided for breeding, feeding, and shelter for species. (59.2)

Response: The reference to piñon die-off occurs in the forest plan, appendix A ("Climate Change Trends and Coronado National Forest Land Management Planning." Appendix A is meant to give managers an idea of the kinds of changes possible under climate change; it is not meant to convey what has occurred or is currently occurring on the Coronado National Forest. We have clarified the statement regarding piñon die-off to read:

> "For example, piñon pines recently experienced a severe dieback following extreme drought in northern Arizona and northern New Mexico, both directly and from increased insect attacks (Breshears et al. 2005)."

Rewording language in appendix A of the plan includes:

> Climate change could have long-term impacts on many of the amenities, goods, and services from forests, including recreational opportunities, productivity of locally harvested plants such as several species of agave and cholla, prickly pear, mesquites, desert hackberry, grasses and sotols, local economics through land use shifts from forest to other uses, forest real estate values, and tree cover and composition in urban areas, and associated benefits and costs

The spelling correction was made. The plan was also modified to clarify the following:

> In fire-adapted ecosystems, fire-adapted native plants are abundant when fire is the critical catalyst used to establish the natural ecosystem process.

Reworded desired conditions for "animals and rare plants" now reads:

> Naturally occurring native ecosystems are present and sustainable across the Coronado National Forest, providing habitat to support a full complement of plants and animals, including sensitive and rare species.

By including the following under management approaches and guidelines, it is inferred under associated desired conditions in chapter 2 of the plan.

> Management Approaches for Animals and Rare Plants - Considering the reintroduction of extirpated species to habitats that are reasonably assured to remain suitable through climate change.

Under guidelines for Madrean encinal woodland, the forest plan states, "Fuel reduction and habitat restoration projects should leave clusters of live trees, snags, and shrubs to benefit species that require these structures for breeding, feeding, shelter, and other habitat needs."

Concern Statement: The Forest Service should clarify the discussion of suitable and unsuitable timber and how determinations were made. (59.22)

Response: Appendix C of the environmental impact statement discusses the timber suitability analysis. Unsuitable forest land is forest land not managed for timber production because: (a) Congress, the Secretary, or the Chief has withdrawn it; (b) it is not producing or capable of producing crops of industrial wood; (c) technology is not available to prevent irreversible damage to soils productivity, or watershed conditions; (d) there is no reasonable assurance based on existing technology and knowledge, that it is possible to restock lands within 5 years after final harvest, as reflected in current research and experience; (e) there is, at present, a lack of adequate information about responses to timber management activities; or (f) timber management is inconsistent with, or not cost efficient in, meeting the management requirements and multiple-use objectives specified in the forest plan.

Table 17 of the forest plan presents the timber suitability analysis. Approximately 86 percent of the Coronado is not considered productive enough for sustainable timber production. Of the remaining forest land, 75 percent has been withdrawn from public domain, primarily designated as wilderness. Of the nonwilderness forestland another 23 percent was removed because of poor or erosive soils. The remaining 45,657 acres are scattered in five mountain ranges across southern Arizona. Much of this timber land has been designated as habitat for threatened and endangered species, either the Mexican spotted owl or the Mount Graham red squirrel; the rest is habitat for goshawk. Management for economical production of timber conflicts with objectives for habitat enhancement and protection, although timber harvest under prescriptions developed to maintain and protect habitat is not a conflict. Timber harvesting may occur; however, it will be to meet other plan objectives and not for the purpose of producing economically viable timber.

Concern Statement: The Forest Service should revise the guideline related to montane meadows to: comply with the Multiple Use-Sustained Yield Act and the National Forest Management Act and to be consistent with the travel management plan; to clarify that permitted water diversions should not alter the area of the meadow; and to prohibit motorized uses in these areas. (59.23)

Response: In response to your comment, we added language to MOM-G-1 to ensure the integrity of montane meadows. Alterations to meadow area are necessary for meadow restoration treatments. MOM-G-1 now reads:

> "Management activities in meadows should not be allowed unless impacts to meadow soils and hydrologic function and native plan assemblages can be mitigated."

In regard to the MOM-G-2, the plan contributes to ecological, social, and economic sustainability focused on meeting the needs of the present generation without compromising the ability of future generations to meet their needs. The plan gives direction to manage the forest consistent with the Multiple Use-Sustained Yield Act of 1960 and provides goods and services including outdoor recreation, timber, range, watershed, wildlife, and fish.

The Multiple Use-Sustained-Yield Act of 1960 (section 1) states:

> "The national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

The National Forest Management Act (section 6(e)(1)) states that in revising plans:

> "provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use, Sustained-Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness . . ."

The plan provides for a variety of recreation opportunities: motorized, nonmotorized, developed, dispersed, and everything in between. However, not every recreation opportunity can be found everywhere on the Coronado National Forest.

Site-specific travel management planning will use the framework set by the plan (desired conditions, standards, guidelines), including those for meadows and will consider potential resource impacts, access needs, public input, and alternative views. If undesirable resource conditions resulted from open roads, they could be addressed through site-specific evaluation and analysis. While the plan does not duplicate the Travel Management Rule or the directives, it is consistent with both and is meant to be used along with the directives and the motor vehicle use map.

Invasive Vegetation Treatment (27)

Concern Statement: The Forest Service should revise the desired condition for nonnative species to reflect that they are not desirable in any circumstance on the forest. (27.01)

Response: The desired condition was not modified. Not all nonnative plants are invasive. The Forest Service defines invasive as:

> "A nonnative species whose introduction is likely to cause or has the potential to cause economic or environmental harm to an ecosystem or harm to human health or commerce." (Executive Order 13112)

Desired conditions for invasive species are covered in chapter 2 of the plan within the "Vegetation Communities," "Desired Conditions," "Landscape Scale" section:

> "Native plant communities dominate the landscape, while invasive species are nonexistent or in low abundance. Establishment of invasive plant species new to the Coronado National Forest is prevented, even as climate change may favor new invaders."

Concern Statement: The Forest Service should remove penalties for the occurrence of lovegrass on monitoring sites and rangelands. (27.12)

Response: The presence of nonnative lovegrass on rangeland monitoring sites is an indicator of departure from desired conditions, according to ecological site guides developed and maintained by the Natural Resources Conservation Service (http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/ecoscience/desc/). The forest plan desired conditions for grasslands and woodlands are based on these ecological site guides. We monitor rangelands to determine whether existing conditions are moving toward, or departing from, desired conditions. The techniques used for monitoring rangelands are outlined in a management approach in the "Range Management" section of the plan. They include the "Southwestern Region Rangeland Management Training Guide," "Technical Interagency Guide," and "Principles of Obtaining and Interpreting Utilization Data on Rangeland." Changing criteria for these rangeland monitoring protocols is not within the scope of the forest plan.

Concern Statement: The Forest Service should implement measures to prevent livestock from spreading weeds, including herding away from infested areas, reducing use of salt blocks, prohibiting use of motorized vehicles for herding, and addressing the problem with invasive plants in water tanks. (27.03, 27.11)

Response: Desired conditions for invasive species are covered in chapter 2 of the plan within the "Vegetation Communities," "Desired Conditions," "Landscape Scale" section:

> "Native plant communities dominate the landscape, while invasive species are nonexistent or in low abundance. Establishment of invasive plant species new to the Coronado National Forest is prevented, even as climate change may favor new invaders."

This goal will encourage the use of management practices that prevent the spread of weeds. The plan does not preclude grazing management options to prevent livestock from spreading weeds, and decisions about what options to use are made at a project level on a case-by-case basis.

Concern Statement: The Forest Service should use the full spectrum of prevention and control strategies for invasive species, including: requiring pelletized/weed-free feed use by outfitters, weed-free campsites, prohibiting grazing in weed-invested areas, and quarantining pack stock animals before entering wilderness; coordinating with partners; prioritizing invasive and nonnative species based on control feasibility, species life history; and protecting high priority intact areas. (27.02, 27.04, 27.06, 27.07, 27.10)

Response: Desired conditions for invasive species are covered in chapter 2 of the plan in the "Vegetation Communities," "Desired Conditions," "Landscape Scale" section:

> "Native plant communities dominate the landscape, while invasive species are nonexistent or in low abundance. Establishment of invasive plant species new to the Coronado National Forest is prevented, even as climate change may favor new invaders."

In the "Desert Communities" section in chapter 2 of the plan, the objective is to:

> "Suppress or eradicate buffelgrass on 1,000 to 1,500 acres of Sonoran Desert every year using herbicide and manual methods."

Management of campsites, outfitters, and users of pack stock are not plan-level decisions and will be made at the project level on a case-by-case basis.

Concern Statement: The Forest Service should include removal of mesquite as a management approach to increase infiltration of precipitation and reduce runoff and erosion. (27.05)

Response: The plan does not preclude the removal of mesquite; however, any proposal would need to go through site-specific analysis. While the plan provides some guidance for managing mesquite and other woody species, mesquite removal is done at the project level and not at the planning level and is therefore outside the scope of the forest plan decision. In the "Grassland Communities" section in chapter 2 of the plan, desired conditions include 0 to 10 percent tree and shrub canopy cover.

Concern Statement: The Forest Service should include Johnson and Bermuda grasses to outcompete invasive species. (27.08)

Response: Bermuda grass and Johnson grass are not native and can be very invasive on the Coronado National Forest, particularly in riparian areas. Desired conditions for invasive species are covered in chapter 2 of the plan within the "Vegetation Communities," "Desired Conditions," "Landscape Scale" section:

> "Native plant communities dominate the landscape, while invasive species are nonexistent or in low abundance. Establishment of invasive plant species new to the Coronado National Forest is prevented, even as climate change may favor new invaders."

Management of individual species is done at the project level and not at the planning level and is therefore outside the scope of the forest plan decision. They will be treated on a case-by-case basis.

Concern Statement: The Forest Service should reconsider the removal of buffelgrass because they have exaggerated the problem. (27.09)

Response: The plan was developed using the best available science for invasive weed control (see the analysis results and literature citations in the plan, the environmental impact statement, and supporting plan record of documents). Buffelgrass is on the Arizona Noxious Weed List, which imparts a legal obligation to landowners (including the Forest Service) to control it. Laws, regulations, and their enforcement are not forest plan-level decisions.

Soils Management

Concern Statement: The Forest Service should place more emphasis on, and establish better standards to address litter, bare soil, soil compaction, and erosion rates to protect the soil resource and provide for long-term sustainability. (5.01, 5.02, 5.03, 5.04, 5.05)

Response: The desired conditions for soil have been revised to incorporate guidance governing soil quality standards outlined in the "Technical Guidance for Soil Quality Monitoring in the Southwestern Region" (USDA Forest Service 2013). This document defines soil quality standards that include an assessment of compaction, erosion, bare soil and litter components in the overall rating of soil quality. The desired conditions now call for the soil resource to be "satisfactory" and to assure long-term sustainability.

Concern Statement: The Forest Service should clearly define acceptable erosion rates. And prohibit grazing in areas that do not meet the standard. (55.04)

Response: Standards for soil quality, including soil erosion, follow regional direction in "Technical Guidance for Soil Quality Monitoring in the Southwestern Region" (USDA Forest

Service 2013). Impaired or unsatisfactory soil conditions are addressed at the project level, grazing allotment analysis process.

Concern Statement: The Forest Service should give priority to constructing loose rock dams and gabions to reduce soil loss and restore vegetation. (55.06)

Response: Loose rock structures are allowed under the plan and would help meet desired conditions. Project-level structure proposals would need to go through site-specific National Environmental Policy Act analysis.

Water, Watershed Management (60)

Concern Statement: The Forest Service should provide information on the current water quality status of watercourses within Coronado National Forest. To ensure sufficient description of the affected environment. (60)

Response: In Arizona, the Arizona Department of Environmental Quality (ADEQ) has responsibility for measuring surface water quality and setting standards for acceptable levels of contaminants. In New Mexico, this is provided by the Surface Water Quality Bureau of the New Mexico Environment Department. The environmental impact statement includes best available science and data. Many water courses are in remote locations that are relatively unaffected by uses that affect water quality. Measurements are generally taken in larger streams where there is a higher likelihood of measuring potential impacts.

Concern Statement: The Forest Service should acknowledge the importance of ephemeral and intermittent streams in the section on Riparian Habitats and add them to the Natural Water Desired Conditions, Objectives, and Standards. (60)

Response: The “General Description of the Natural Waters” section has been modified to include ephemeral and intermittent streams. Also, a statement was added that streams mentioned generally in the “Natural Waters” section and in other sections of the plan refer to ephemeral, intermittent, and perennial streams.

In the “Riparian” section, a few words were changed or added to be more inclusive of all stream types, including perennial, intermittent, and ephemeral.

Concern Statement: The Forest Service should include specific location and information on instream flow rights for Harshaw Creek in Appendix G, Table 23. (60)

Response: The original intent of appendix G, table 23 was not to analyze the purpose or environmental impacts of the instream flow water rights applications, but was merely to state that they exist. This table was removed from the revised forest plan as it didn’t provide useful information. The location and information about a particular instream flow water right and any associated monitoring station(s), including Harshaw, can be provided upon request on a case-by-case basis.

Concern Statement: The Forest Service should clarify the expectations regarding monitoring of riparian areas. (60)

Response: The monitoring and evaluation strategy shown in chapter 6 of the plan includes resource area monitoring to assess riparian areas, natural water sources, constructed water sources, and watersheds. Monitoring would be established to determine if riparian areas on the

forest are at or moving towards desired conditions shown in the plan for riparian areas and wetlands. Possible monitoring methods are listed in chapter 6, but these may change as new technology and methodologies are developed to assess riparian health.

Concern Statement: The Forest Service should modify the guidelines for riparian areas to ensure that effects to channel morphology from road construction are also considered. (60)

Response: The guidelines have been modified to include channel morphology as requested.

Concern Statement: The Forest Service should modify the wetland standard to include a goal of increasing wetland habitat through restoration or creation. (60)

Response: The "Wetland" section has been substantially revised since this comment was received. Changes made to that section now include more discussion about restoration. In regards to standards and guidelines, a guideline was added that states that wetland conditions will be "kept the same or improved". A management approach was added: "Cooperating with conservation groups and agencies to leverage resources and implement projects that remove invasive plants, plant native vegetation, or otherwise assist to restore wetlands". These changes were made to incorporate more intent towards restoration.

Concern Statement: The Forest Service should include more information on the effects and location of the Patagonia Municipal Supply Watershed designation including information on the effects to hydrology, mining, and the economy. Some respondents feel that the designation should be reconsidered or rejected. (60.03, 60.10, 60.11, 60.17, 60.35, 60.46)

Response: Regulation in the U.S. Code (42 U.S.C. Part A (4)(a)) defines a public water supply as follows:

> "The term ''public water system'' means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals."

The Forest Service regulation for management of municipal watersheds (36 CFR 251.9 (a)) states:

> "The Forest Service shall manage National Forest watersheds that supply municipal water under multiple use prescriptions in forest plans (36 CFR part 219). When a municipality desires protective actions or restrictions of use not specified in the forest plan, within agreements, and/or special use authorizations, the municipality must apply to the Forest Service for consideration of these needs."

The Town of Patagonia water system treats and distributes water to approximately 3,000 residents and meets the legal requirements for a public water system. Recognition of the Town of Patagonia municipal supply watershed in the forest plan is in alignment with the legal requirements listed above. The watersheds will continue to be managed for multiple use and no restrictions are being incorporated. The Town of Patagonia and the Forest Service entered into an agreement to allow the town to post the watershed as a municipal supply watershed, conduct education programs in the watershed, and sample water quality according to Arizona Department of Environmental Quality protocols. Since no restrictions are being placed on these watersheds, no effects are predicted.

Concern Statement: The Forest Service should clarify diversions of water in wet meadows to resolve apparent conflicts, and to prohibit such diversions. (60.19, 60.38)

Response: Guidelines for meadows are found in chapter 2 of the plan within the "Vegetation Communities" section. The forest plan states:

> "Management activities in meadows should not be allowed unless impacts to meadow soils and hydrologic function and native plant assemblages can be mitigated."

In addition, a standard within the "Wetlands" section is updated slightly; see bold text below.

> Management activities will only be allowed in wetlands, **including wet meadows**, if vegetative communities (except noxious and/or invasive plants), soil function and structure, and hydrologic function are kept the same or improved.

Concern Statement: The Forest Service should clarify objectives and correct references related to instream flow information for both New Mexico and Arizona. (60.18, 60.21, 60.22)

Response: The forest plan includes the following objective:

> "Every 10 years, apply for at least 10 instream flow water rights on streams for recreation and wildlife purposes, prioritizing locations necessary for sustaining native fish populations and species of conservation concern."

We believe this objective reflects the importance of protecting the rights of the American public for instream flows. The State of New Mexico water law does not address instream flow water rights. State of Arizona water law addresses instream flow water rights and the nonconsumptive use for recreation and wildlife (including fish).

Concern Statement: The Forest Service should consider more specific standards and direction on the restoration of aquatic habitats (including: springs, seeps, riparian areas, water courses, wet meadows) to better protect these resources and provide water for wildlife and livestock. (60.16, 60.25, 60.30, 60.33, 60.36, 60.43)

Response: The objectives for natural water sources are for three developed springs to be restored every 10 years and three stream restoration projects, development projects, or both every 10 years to benefit aquatic habitat and species. The requirements in the plan are a minimum; the Coronado National Forest can do more restoration than that required by the forest plan. The Coronado has implemented the watershed condition framework process to help identify priority watersheds in need of restoration (see http://www.fs.fed.us/publications/watershed/).

Other additions and changes were made to the draft forest plan in response to this concern statement; see below.

In the "Natural Waters" section, under "Desired Conditions:"

> "Where springs or other natural waters have been modified for livestock, wildlife, and/or human consumption, those developments that are still needed for these purposes are operational. Those that are no longer needed are dismantled, shut down, or otherwise are not creating or adding to natural resource problems."

In Natural Waters section, under "Guidelines:"

> "Water quality, quantity, soil function and structure, and wildlife habitat (including aquatic species habitat) should be protected or enhanced at natural springs and seeps."

> "Vegetation treatments should favor the retention of snags, large diameter woody debris, and growth of large riparian trees along stream channels."

In Natural Waters section, under "Management Approaches:"

> "Coordinating with conservation groups and agencies to do spring inventory, assessment, **restoration**, monitoring, and research."

In Wetlands section, under "Management Approaches:"

> "Cooperating with conservation groups and agencies to leverage resources and implement projects that remove invasive plants, plant native vegetation, or otherwise assist to restore wetlands."

In Watersheds section under "Objective:"

> "Complete essential projects identified in a Watershed Restoration Action Plan (WRAP) for at least one identified priority watershed every 10 years."

In Watersheds section under "Guidelines:"

> "Watershed Restoration Action Plans (WRAP) should be used to guide completion of essential watershed projects."

In the "Watersheds" section, all management approaches discuss the promotion or implementation of projects that improve watershed function, which would include the areas described in the concern statement.

Concern Statement: The Forest Service should assess and protect groundwater conditions and related aquatic habitats and disclose the effects of the plan on these resources. (60.06, 60.07, 60.20)

Response: The plan was developed using the best available science for groundwater (see the analysis results and literature citations in the plan, the environmental impact statement, and supporting plan record of documents). Page 185 of the draft environmental impact statement discussed groundwater and the numerous Forest Service groundwater policies such as Forest Service Manuals 2543 and 2560 and technical manual 2880. Numerous sections detail the risks to the resource (such as wildlife, natural waters, and aquatic habitat) from groundwater dewatering and withdrawal.

The "Natural Waters" section of the draft forest plan included measures that would protect groundwater and related aquatic habitats, though the description doesn't specifically mention groundwater depletion as an overall concern for the resource. The revised forest plan has been updated to include it; see below:

> "Water resources are also at risk due to <u>increased drawdown of aquifers and</u> competing demands for multiple uses."

Groundwater depletion was also added to the "Constructed Waters" section:

> "Water resources are also at risk due to increased drawdown of aquifers and competing demands for multiple uses."

There aren't any measures protecting groundwater resources in the Constructed Waters section, but the reason for this is described in the "Water Quantity – Groundwater" section of the final environmental impact statement:

> "Because the vast majority of groundwater withdrawals in southeastern Arizona and southwestern New Mexico occur on lands outside the Coronado, the Forest Service has no influence on their control. Forest Service groundwater policy (Forest Service Manuals 2560, 2880, and 2543) as well as agency technical guides provide direction for well drilling and pumping on the Coronado, specifying that these activities must not adversely affect connected riparian habitat and water quantity and quality. Because direction in the Forest Service Manual is considered adequate and groundwater withdrawal is governed by State regulations, additional management direction was not specified by any of the action alternatives and they are not analyzed in this final environmental impact statement."

Concern Statement: The Forest Service should address the impacts of mining on domestic water supplies and riparian habitats. (60.13, 60.31)

Response: When projects related to existing mines or future mines are proposed, they must go through environmental analysis to disclose potential effects from the project including effects to riparian areas and communities. The sources of water, quantity, and legal availability are part of the disclosure.

Concern Statement: The Forest Service should provide more protection for riparian and other water sources by including these in desired conditions, objectives, and standards to acknowledge their importance and ensure their protection. (60.24, 60.28, 60.39, 60.42)

Response: Riparian areas are discussed in chapter 2 of the plan in the "Vegetation Communities" section on "Riparian Areas". This section details the desired conditions, objectives, and guidelines which address the protection of riparian areas. We are concerned about protecting riparian areas as demonstrated by the following guideline:

> "Management activities should only be allowed in riparian areas if soil function and structure, hydrologic function and riparian plant communities (except noxious and/or invasive plants) are kept the same or improved."

Concern Statement: The Forest Service should assess all water rights within the forest and discuss how changes in the plan may affect owners and users. (60.02, 60.15)

Response: An assessment of water rights is outside of the scope of forest planning. Water rights are not within the jurisdiction of the Forest Service and are managed by the Arizona Department of Water Resources.

Concern Statement: The Forest Service should prioritize water resources for springs and riparian areas and discuss biological importance including threatened and endangered species. (60.44, 60.45)

Response: We developed the plan using the best available science for water resources and riparian areas (see the analysis results and literature citations in the plan, the environmental impact statement, and supporting plan record of documents). Forest Service policy also requires interdisciplinary specialists to use the best available science for their analyses at the project level, to inform the deciding official. The forest plan addresses these topics in numerous locations

including in the “Vegetation” section, “Animals and Rare Plants” section, and “Natural and Constructed Water” section.

As stated in chapter 2 under “Watersheds – General Description”, we have a procedure for prioritizing watershed restoration which includes evaluating riparian and springs. This procedure is the watershed condition framework. In the framework, class 1 watersheds are defined as functioning properly, class 2 watersheds are functioning at risk, and class 3 watersheds are impaired function. The classes are based on four processes: aquatic physical processes, aquatic biological processes, terrestrial physical processes, and terrestrial biological processes. The watershed condition framework is used to identify priority watersheds for restoration treatments.

As stated in chapter 2 under “Response to Climate Change: Aquatic, wetland, and riparian systems”, these systems also contain many threatened and endangered species. They are dependent on water and thus vulnerable to shifts in precipitation regimes. They may be further threatened by increased human demand for water for use in grazing, agriculture, and municipal drinking water.

It is noted throughout the document that both springs and riparian habitat are important environments for numerous wildlife species including a variety of threatened or endangered species including the threatened Chiricahua leopard frog and the endangered Gila chub.

As stated in chapter 2 under “Riparian Areas – Desired Conditions”, the ecological condition of riparian areas is resilient to animal and human use.

As stated in chapter 2 under “Animals and Rare Plants – Guidelines”, activities occurring in federally listed species habitat should apply habitat management objectives and species protection measures from approved recovery plans and signed conservation agreements.

As stated in chapter 2 under “Natural Water Sources – General Description”, natural waters provide water sources that are vital to wildlife. Some species also need natural waters for other critical life history components (such as food, shelter, and reproduction). These include the Chiricahua leopard frog, Sonoran tiger salamander, Northern Mexican gartersnake, Gila chub, Gila topminnow and many species of insects with aquatic larvae.

Concern Statement: The Forest Service should take a watershed approach to monitoring, assessment, management, and to prioritize areas for treatment. The Forest Service should coordinate with other land management agencies and partners using a watershed approach. (60.05, 60.07, 60.47)

Response: We agree and we are taking a watershed approach to monitoring, assessment, management, and to prioritize areas for treatment whenever possible. We have added a “Watershed” section to the forest plan to emphasize this approach. We are also actively coordinating with other land management agencies and partners, using a watershed approach. An example of this work is our participation in the Sky Island Restoration Collaborative, which is accomplishing watershed restoration projects in the Chiricahua Mountains.

Concern Statement: The Forest Service should ensure that access to all water-related facilities is maintained to avoid loss of facilities and property rights. (60.04)

Response: The forest plan describes the issue of access and management approaches to address this issue in numerous locations including pages 8, 73, 74, and 94

Concern Statement: The Forest Service should revise the list of streams eligible for wild and scenic river designation. Because none of the streams listed meet the qualifications for designation. (60.12)

Response: All rivers on the Coronado National Forest were evaluated to determine their eligibility as wild, scenic, or recreational rivers. Sixteen river segments are eligible for designation (forest plan pages 120 and 121). Evaluation includes a specific set of criteria which must be used to develop the list. Revising the list would not be consistent with the criteria used.

Concern Statement: The Forest Service should add surface water runoff as a way that constructed waters are fed. (60.14)

Response: Constructed waters are fed by a variety of methods including natural springs, groundwater wells, or stream diversions (forest plan, page 61) and these include surface water runoff in the form of stream diversions.

Concern Statement: The Forest Service should manage surface and groundwater resources conjunctively to benefit cave fauna. (60.23)

Response: We manage surface and groundwater resources conjunctively to benefit cave fauna as outlined in the "Forest Service Technical Guide to Managing Groundwater" (FS-881 May 2007) and in chapter 2, "Forestwide Management" under "Biophysical Features", "Desired Conditions":

> "Water flowing into, from, or within the cave system is not altered or diverted in its flow; contains normally fluctuating background levels of sediment, organic matter, and dissolved minerals; and is not polluted."

and in Chapter 2, "Forestwide Management" under "Biophysical Features", "Guidelines":

> "Surface management activities, including drilling, in the vicinity of cave and karst features should avoid actions that would significantly impact underground ecosystems by modifying drainage patterns, subsurface water and airflow, or other natural processes."

Concern Statement: The Forest Service should revise desired conditions related to water flow and wetlands to better reflect current circumstances and science. (60.27)

Response: The plan was developed using the best available science for water flow (see the "Natural Water Sources" and "Constructed Waters" sections) and wetlands (see the "Wetlands" section). Also, see the analysis results and literature citations in the plan, the environmental impact statement, and supporting plan record of documents. Forest Service policy also requires interdisciplinary specialists to use the best available science for their analyses at the project level, to inform the deciding official.

Concern Statement: The Forest Service should include an analysis of water demands on development opportunities to ensure sustained yield to support multiple uses. (60.32)

Response: The plan would not preclude the analysis of water demands on development opportunities; however, any proposal would need to go through site-specific National Environmental Policy Act analysis. Forest Service policy already dictates sustained yield to support multiple uses.

Concern Statement: The Forest Service should proceed with the standard protecting existing wetlands. (60.37)

Response: The forest plan will allow the Forest Service to proceed with the standard protecting existing wetlands.

Concern Statement: The Forest Service should develop a drought policy to address the nature of drought and how to protect resources during drought. (60.40)

Response: Drought is a recurrent phenomenon of variable intensity and duration that has different effects on forest uses so that it would be extremely difficult to develop one overarching policy for all resources. It is more reasonable to account for mitigation of drought effects on a site-specific basis through project planning or implementation of adaptive management measures. Drought is discussed at length in chapter 2 of the plan in the "Response to Climate Change" section and in appendix A of the forest plan, "Climate Change Trends." Protection and sustainability of individual natural resources and achieving desired conditions in the presence of recurring drought is the goal of the plan.

Concern Statement: The Forest Service should integrate the management approach related to water conservation into other sections of the plan. (60.48)

Response: Water conservation is discussed in chapter 2 of the plan in the "Response to Climate Change" section and in appendix A of the plan, "Climate Change Trends." The "Watershed" section, as written, focuses on water resources and conservation across the forest including each vegetative type. Additional aspects of water resources are given in wetlands and riparian vegetation type.

Individual Species (25)

Concern Statement: The Forest Service should reconsider management direction for the Wet Canyon Talussnail because the snail is geographically restricted.(25)

Response: There is nothing in the revised plan to indicate that the management plan involves any area other than the 1,218 acres in the Pinaleño Mountains.

Concern Statement: The Forest Service should acknowledge that jaguar sightings and population trends are likely related to human activity and that jaguars have not been harmed as a result of roads, habitat fragmentation, corridor blocking, or border security measures. The primary threat to jaguars has been from shooting. (25.01, 25.07, 25.13)

Response: The Forest Service relies on the information published by the U.S. Fish and Wildlife Service as to the threats and recovery of all endangered species including the jaguar. Page 231 of the draft environmental impact statement described the risk factors to jaguars and identifies shooting as the primary risk historically and to date.

Neither the forest plan nor the environmental impact statement go so far as to speculate concerning the cause of increased or decreased sightings or population trends. These are in the realm of peer-reviewed scientific study. Project-specific effects to the species and its habitat are not considered at the forest plan level. The effects of road construction, habitat fragmentation, and border security projects are assessed at the time of their planning.

Concern Statement: The Forest Service should adopt standards that protect the areas identified as critical jaguar habitat and jaguar. The Forest Service should assist in the recovery of the jaguar. (25.02, 25.09, 25.28)

Response: The draft environmental impact statement, chapter 3, (pages 230 and 231) described actions being taken by the U.S. Fish and Wildlife Service, Arizona and New Mexico Game and Fish Departments, and scientific community to aid in recovery of the species. The forest plan includes plan guideline ARP-G-1, which guides the Coronado National Forest to comply with all signed recovery plans. We are a cooperating agency along with Arizona and New Mexico Game and Fish in the recovery of the species.

Concern Statement: The Forest Service should identify and protect key refuge site of the lowland leopard frog and Gila chub to help preserve the species. (25.03)

Response: The environmental impact statement (see the "Regionally Sensitive Species and Other Forest Planning Species – Environmental Consequences" section) includes a list of sensitive species identifying the threats and plan components that address those threats. Lowland leopard frog is included in this list.

The Gila chub is a federally listed species. At the time of the listing, critical habitat was identified by the U.S. Fish and Wildlife Service specifically to protect "key refuge sites." Critical habitat has been designated and includes several drainages in the Coronado National Forest. Moreover, guideline ARP-G-1 guides the Coronado to implement recovery plans including that of the Gila chub.

Concern Statement: The Forest Service should include separate guidelines for the Apache goshawk because the species is different from the northern goshawk and is a candidate for listing under the Endangered Species Act. The Forest Service should revise the guideline for goshawks because it does not accurately represent the minimum numbers of nest areas required for reproductive success to accurately reflect the nesting habits of goshawks. The Forest Service should reconsider eliminating standards and guidelines for northern goshawk to comply with the National Forest Management Act and the National Environmental Policy Act. (25.04, 25.24, 25.26)

Response: The goshawk guidelines were adopted throughout the Southwestern Region in 1996 and apply to all subspecies of goshawk that occur on National Forest System lands in the region. These guidelines were carried forward into the forest plan and are found in chapter 2, "Animals and Rare Plants" section, guidelines 4a through 4d. The goshawk guidelines were developed by an interagency team of biologists that used the best available science to describe the requirements and develop management recommendations for this species.

Concern Statement: The Forest Service should manage and conserve roosting habitat for bats including snags, caves, and abandoned mines. The Forest Service should include canyon bat in the list of common animal species for desert communities. The Forest Service should acknowledge that the forest is home to more than half of the bat species known from the United States and Canada, and that they are dependent on the availability of surface water for drinking. (25.02, 25.08, 25.15, 25.18)

Response: The desired conditions for the woodland and forest vegetation communities include statements for snag maintenance across the landscape (see chapter 2 of the forest plan, "Vegetation Communities," sections on Madrean encinal woodland, Madrean pine-oak woodland, ponderosa pine-evergreen shrub, dry and wet mixed-conifer, and spruce-fir).

We added snag retention to guidelines VME-G-1, VMP-G-2, VPP-G-3, VDM-G-3, and VWM-G-4. The guidelines read:

> "Fuel reduction and habitat restoration projects should leave clusters of live trees, snags, and shrubs to benefit species that require these structures for breeding, feeding, shelter, and other habitat needs." (VME-G-1)
>
> "Clusters of trees, shrubs, and snags should be maintained in treatment areas to benefit species that require these structures for breeding, feeding, shelter, and other needs. Snags may not be retained if safety concerns exist." (VMP-G-2)
>
> "Fuel reduction or fuelwood gathering projects should retain some large-diameter trees, snags, and shrubs, and these should be protected well enough from scorching to survive subsequent burn treatments."(VPP-G-3, VDM-G-3 and VWM-G-4)

We keep a list of common desert species for any habitat type. We acknowledge there is a diversity of bat species and have added the canyon bat to the common species list for desert communities in the plan. The forest plan includes plan components to protect and enhance many water resources. The plan components can be found in the "Natural Waters" and "Constructed Waters" sections in chapter 2.

Concern Statement: The Forest Service should note that the fungus that causes white-nose syndrome in bats has been renamed "*Pseudogymnoascus destructans*." (25.16)

Response: The environmental impact statement has been updated to reflect that the fungus that causes white-nose syndrome has been renamed *Pseudogymnoascus destructans*

Concern Statement: The Forest Service should clarify why there is no restriction on nighttime motorized travel in bat habitat. (25.20)

Response: Any restrictions on motorized travel on the Coronado would be considered during the travel management planning process.

Concern Statement: The Forest Service should only close areas for peregrine falcon nesting if the birds are actually present. (25.10)

Response: Closure orders are outside the scope of the plan and are completed through a site-specific National Environmental Policy Act analysis.

Concern Statement: The Forest Service should reconsider eliminating standards and guidelines for Mexican spotted owl in order to ensure adequate protection of the species under the Endangered Species Act. (25.11)

Response: The forest plan includes guideline ARP-G-1 which guides us to comply with all signed recovery plans. The recovery plan for the Mexican spotted owl, finalized in 2012, includes much more comprehensive and current guidance than the1996 plan amendment. We will comply with the recovery plan.

Concern Statement: The Forest Service should revise the plan as it relates to red squirrel in the following ways: (1) ensure that the population information is accurate; (2) include the observatory as a threat; (3) include a standard to remove Abert's squirrel from red squirrel habitat; (4) ensure that efforts to protect red squirrel will not diminish values for other species; (5) explain how impacts from climate change will not affect the squirrel during the life of the plan; (6) include plans for the completion and implementation of a revised Mount Graham Red Squirrel Recovery plan. (25.12)

Response: Population information for the Mount Graham red squirrel is obtained from annual interagency surveys conducted by the Forest Service, U.S. Fish and Wildlife Service, Arizona Game and Fish Department, and the University of Arizona squirrel lab. These population estimates are derived using scientifically appropriate survey methods, which involve surveying a subsample of middens (food cache sites), assessing activity level, and then extrapolating the results to the population level. The method is standardized and randomized to obtain the most accurate results possible, and a range of a single standard deviation in each direction is reported as well.

Because the Mount Graham International Observatory is already installed and has not submitted plans to expand, the Forest Service must consider that the effects of the observatory have been documented and addressed under the existing National Environmental Policy Act documentation and the associated consultation documents (AESO 02-21-86-F-075) and as such is considered part of the baseline for effects to the squirrel.

The Arizona Game and Fish Department is charged with management of game and nongame wildlife species and takes the lead on manipulations of wildlife species. The Forest Service has assisted, and may continue to assist, with removal of Abert’s squirrels to aid red squirrel populations, but the main efforts of the agency will focus on improving habitat characteristics (such as tree density, tree species composition, and fuels conditions) for red squirrels.

To the extent possible, all project planning is conducted alongside analysis of multi-species effects and benefits. These analyses are required under a number of regulations (including the Endangered Species Act) and policies (Forest Service Manual 2670.32 and 2670.22, and 36 CFR 219.19) to ensure no one species is favored to the detriment of others.

Climate change may affect red squirrels during the life of the plan; however, the extent of these effects is not specifically quantifiable within the time period that will entail. The Forest Service is focusing on making habitats as resilient as possible to wildfire, insect infestations, and other factors in order to provide the most sustainability possible given the unknown nature of the effects of climate change.

In chapter 3 of the environmental impact statement, the “Species Diversity and Viability,” “Environmental Consequences” section acknowledges a revision of this recovery plan is currently in preparation. When finalized, the recovery plan will be complied with under ARP-G-1. The creation of a recovery plan is under the authority of the U.S. Fish and Wildlife Service, rather than the Forest Service. The Forest Service will assist in this process as much as possible and will comply with it during project planning and implementation phases.

Concern Statement: The Forest Service should describe how big-horned sheep would impact the Mount Lemmon area around Pusch Ridge. (25.14)

Response: The Bighorn Sheep Management Area overlaps the Pusch Ridge Wilderness. Its primary purpose is to enhance and protect bighorn sheep and their habitat. It is managed under a closure order which prohibits hiking more than 400 feet off a designated trail during the lambing season, as well as the prohibition of dogs in the management area year round. In all other considerations, wilderness management standards and guidelines are the driving consideration for activities in this area. As such, there are no effects to the Mount Lemmon area from the bighorn sheep closure.

Concern Statement: The Forest Service should provide more information on the extent to which fencing is affecting antelope. The Forest Service should provide hiding cover and a robust small plant community to benefit antelope. The Forest Service should include a desired condition for survival of antelope fawns to expand the existing population to provide adequate hiding cover (25.17, 21.21, 21.22)

Response: We cooperate with Arizona and New Mexico Game and Fish Departments on the management of this species and habitat. The effects to the antelope from projects such as fencing are considered and can be mitigated at the project level. Also, in many situations, antelope habitat is enhanced as a benefit of management activities at the project level. Grassland community management activities fulfilling desired conditions, objectives and guidelines will improve hiding cover and small plant communities which benefit antelope populations.

Concern Statement: The Forest Service should acknowledge that California Gulch has a small but consistent population of five-striped sparrows. The Forest Service should acknowledge that the Santa Rita Mountains have some of the highest populations of Mearn's quail in the region. (25.19, 25.27)

Response: The Coronado is home to some of the greatest bird diversity in the United States and management of their habitat is an important aspect of the forest plan. Chapter 3 of the environmental impact statement includes a section dedicated to consideration of species protected by the Migratory Bird Treaty Act Executive Order 13186 and the 2008 memorandum of agreement between the Forest Service and the U.S. Fish and Wildlife Service concerning the conservation of migratory birds. While not specifically mentioned, the five-striped sparrow is a species covered by the Migratory Bird Treaty Act. The approach to habitat management in the forest plan focuses on creating resilient habitat that will support the life cycle needs of a large variety of wildlife including migratory birds such as five-striped sparrow. Approaches to managing habitat for resiliency can be found in the “Vegetation” section of chapter 3.

Concern Statement: The Forest Service should include the black-tailed prairie dog and pronghorn antelope as a management indicator species. (25.23, 25.24)

Response: The forest plan considered a variety of species during the process of determining management indicator species. Among the criteria for management indicator species was their distribution throughout their habitat available on the Coronado National Forest. Black-tailed prairie dogs do not currently occur on the Coronado National Forest so they are not an adequate indicator. The pronghorn also was not considered because of its limited distribution on the Coronado National Forest.

Seasonal Closures/Access (53)

Concern Statement: The Forest Service should revise the objective related to installing closures at mines, caves, and adits to limit closures to on an as-needed basis, as requested by the public to

exclude caves, to clarify the costs and benefits of closing mines, and to ensure that closures are wildlife-friendly. (53.01)

Response: The objective of adding wildlife-friendly closures is to help meet the desired conditions for forestwide management of biophysical features. Any installation of wildlife-friendly closures at mines, caves, or adits would require separate site-specific analysis at the project-level, which includes public involvement and analysis of effects.

Wildlife and Animals Management (64)

Concern Statement: The Forest Service should clarify how wildlife and riparian areas will see increased protection under the new plan.

Response: Species viability assessments conducted as part of the planning process and reports potential effects of plan direction on federally listed species and designated critical habitat; species and habitat proposed for listing; Forest Service, Region 3 sensitive species, migratory birds, eagles, forest management indicator species; and other planning species for the Coronado. An assessment of species diversity for the Coronado was completed. The coarse-filter approach of the 1982 Planning Rule guided the forest plan revision team in prescribing management direction necessary to conserve the diversity of forest plant and animal communities. From an initial list of 1,400 species, 437 species (terrestrial, aquatic, and plant) were determined to have a potential viability concerns. Designated as "forest planning species," they include 36 mammals, 32 birds, 8 amphibians, 19 reptiles, 73 insects, 4 other invertebrates, 16 fish, 56 mollusks, 7 fungi-lichen, 5 mosses-liverworts, and 181 plants. Species viability assessments for those 437 species have been prepared according to Forest Service policy (Forest Service Manual 2670) and documented in three specialist reports: the "Coronado Population Viability Assessment Report," "Coronado draft environmental impact statement biological assessment" and "Coronado draft environmental impact statement biological evaluation." See Species Diversity and Viability section in FEIS for more details.

"Chapter 2 Forestwide Management" includes desired conditions, objectives, guidelines, and management approaches for riparian areas (page 51) and animals and rare plants (page 65). Guidelines for protecting animals and rare plants are also found in various other sections of chapters 2, 3, and 4. A change to the final plan from the draft plan includes a new guideline regarding conservation agreements.

Concern Statement: The plan should provide an ecosystem approach to stop aquatic habitat degradation, maintain habitat and ecosystems that are currently in good condition, and to aid recovery of at-risk aquatic species and their habitat. (64)

Response: The "Natural Waters" and "Watershed" sections of the forest plan have been updated since the draft plan, including "General Description" and "Desired Condition" sections that better describe overall stream function. Desired conditions for riparian areas includes the statement:

> Habitat and ecological conditions are capable of providing self-sustaining populations of native, riparian-dependent plant and animal species.

Also, there is more information on how stream channels should be protected and maintained in the course of Forest Service management. Standards, guidelines, and management approaches have been updated since the draft plan to include more protections for water sources, which will

in turn help to protect fish and wildlife populations. The importance of habitat connectivity is asserted in the "Desired Conditions" of the "Natural Waters" and "Watershed" sections.

Concern Statement: The Forest Service should protect Endangered Species Act-listed species and prevent species extinctions. (64.01, 64.13, 64.21)

Response: The Forest Service is required by law to adhere to Endangered Species Act regulations, and to consult with U.S. Fish and Wildlife Service on all projects with the potential to have an adverse impact on listed species. Additionally, we analyze effects to Endangered Species Act candidate species and Forest Service sensitive species at the project level to prevent a trend toward listing under the Endangered Species Act.

Concern Statement: The Forest Service should ensure that adequate data are gathered and analyzed to meet species viability requirements of National Forest Management Act and to properly guide management decisions. (64.02, 64.10, 64.08, 64.25, 64.26)

Response: We prepared species viability assessments for 437 species according Forest Service policy, Forest Service Manual 2670, and these were documented in three specialist reports: "Coronado Population Viability Assessment Report," the biological assessment for the draft environmental impact statement, and the biological evaluation for the draft environmental impact statement. These assessments considered factors such as availability and current conditions of the habitat, population occurrences and distribution, and threats from Forest Service management actions. See chapter 3 of the environmental impact statement for more information.

Concern Statement: The Forest Service should ensure appropriate wildlife access for wildlife species around manmade developments. (64.03, 64.04, 64.09)

Response: The forest plan desired conditions were intended to ensure that manmade features do not impede animal movement. Ramps have been or are being installed at many wildlife waters across the national forest to allow smaller species access and egress from water sources.

Concern Statement: The Forest Service should modify wildlife standards to clarify that reintroduction will only occur when conditions are appropriate. The Forest Service should avoid species designations and reintroductions until they are substantiated by reproducible scientific data. (64.05, 64.27)

Response: Species reintroductions are coordinated with wildlife management agencies (U.S. Fish and Wildlife Service, and Arizona and New Mexico Game and Fish Departments) to reestablish native populations or to prevent a trend toward Endangered Species Act listing. Such actions are outside the scope of the forest plan.

Concern Statement: The Forest Service should protect wildlife from noise, including noise from mining activities. (64.06, 64.11)

Response: The forest plan proposes a number of management strategies to provide a diversity of wildlife habitats, including designated wilderness and roadless areas that would provide quiet wildlife habitat. The impacts of noise from mining activities on wildlife are determined during project-level National Environmental Policy Act analyses.

Concern Statement: The Forest Service should acknowledge the importance of the habitats provided by the Coronado National Forest to a number of special status and bird species of conservation concern. (64.07, 64.18, 64.20, 64.24, 64.29, 64.30, 64.32)

Response: Additional language has been added to the forest plan in the "Animals and Rare Plants" section to highlight the diversity of bird species in the Coronado National Forest. Site-specific areas have been identified in the plan that help protect bird species habitats: Cave Creek Birds of Prey Zoological-Botanical Area (Chiricahua Ecosystem Management Area), South Fork of Cave Creek Zoological-Botanical Area (Chiricahua Ecosystem Management Area), Guadalupe Canyon Zoological Area (Peloncillos Ecosystem Management Area), Sycamore Canyon Important Bird Area (Tumacacori Ecosystem Management Area), and Appleton-Whittell Research Ranch (Huachuca Ecosystem Management Area).

Concern Statement: The Forest Service should ensure that closure areas are supported by science and monitored for effectiveness. (64.16, 64.22)

Response: Closure areas are not a forest plan-level decision. The Forest Service uses the best information and data available, and cooperates with the U.S. Fish and Wildlife Service, and Arizona and New Mexico Game and Fish Departments when establishing closure areas to protect specific species during critical times of the year.

Concern Statement: The Forest Service should acknowledge that two additional sites on the national forest are being evaluated for inclusion as important bird areas. The Forest Service should consider the important bird areas identified by Audubon. (64.31, 64.33)

Response: The Forest Service does not designate important bird areas, and the forest plan does not include specific desired conditions or standards for important bird areas. However, in the environmental impact statement, the list of important bird areas on the Coronado National Forest has been updated.

Concern Statement: The Forest Service should work to protect existing habitat and restore ecological functions to counteract the severe habitat degradation from human uses. (64.17)

Response: Many forest plan components including objectives, standards, and guidelines were developed to do just that. Objectives VDM-O-1 and VWM-O-1 include the treatment of 13,800 acres of dry mixed conifer and 2,400 acres of wet mixed conifer respectively every 10 years. As an example, the guidelines VDM-G-1, VDM-G-2, VDM-G-3, VDM-G-4, VDM-G-5, VWM-G-1, VWM-G-2, VWM-G-3, VWM-G-4, VWM-G-5, and VWM-G-6 are intended to restore mixed conifer forests to more natural conditions. Similar standards and guidelines exist for woodlands, grasslands, riparian areas, and desertscrub.

Concern Statement: The Forest Service should add a desired condition regarding the ability of wildlife to adjust their movements in response to climate change. (64.12)

Response: We have developed a desired condition to maintain viable wildlife corridors. Should problems be identified for individual species, including from climate change, this would be addressed on a case-by-case basis and not at the forest plan level.

Concern Statement: The Forest Service should acknowledge the importance of warm-water fish species and provide management direction to protect them. (64.14)

Response: The plan includes many components designed to enhance or restore native, warm water fish habitat. Examples include NWS-O-1 and NWS-O-2 which are objectives designed to acquire water rights on areas where fish occur as well as reconstruct springs to support native wildlife, including fish. Guideline ISM-G-1 will result in the removal of nonnative invasive plant and animal species where fish and other special status aquatic species occur. The guidelines NWS-G-2, NWS-G-3, NWS-G-4, and NWS-G-5 allow for natural instream movement; reduce fuel build up; and protect water quality, quantity, and habitat features at natural springs and seeps prioritized on habitat where fish occur.

Concern Statement: The Forest Service should ensure that wildlife populations are managed properly to support the recreation and tourism economy and for the preservation of the culture and lifestyles of the local (human) population. (64.15)

Response: The forest plan calls for healthy populations of native species to allow for hunting, fishing, and other wildlife-based recreation activities in the "Animals and Rare Plants" section.

Concern Statement: The Forest Service should acknowledge that the Rocky Mountain Research Station has developed a system for assessing vulnerability of species. (64.19)

Response: The Rocky Mountain Research Station has indeed published a general technical report entitled "A System for Assessing Vulnerability in Species" (GTR RMRS-GTR-257, Bagne et al. 2011). Although not specifically cited, this report was considered in the preparation of the forest plan and environmental impact statement.

Concern Statement: The Forest Service should ensure that wildlife surveys will occur after gates are installed. (64.23)

Response: Although not clear, the commenter is likely talking about installation of bat gates. Guideline BIP-G-5 calls for management and protection of bat roosts. Such management may include installation of bat gates. Such installation projects would be subject to environmental review and while not explicitly stated in the guideline, post installation monitoring is a typical part of gating projects.

Concern Statement: The Forest Service should monitor management indicator species population and habitat trends to comply with the National Forest Management Act. (64.28)

Response: The management approaches section in the "Animals and Rare Plants" section of chapter 2 proposes to use the results of management indicator species monitoring to design adaptive management strategies to meet species conservation needs.

Concern Statement: The Forest Service should increase the number of management indicator species in the plan: to represent ecosystem trends and to include species of high public concern and specialized habitat requirements to represent the range of habitats; to allow for successful monitoring of forest health; and to include the 32 management indicator species in the previous plan (39.01)

Response: Management indicator species were selected based on the criteria that their population changes are believed to indicate the effects of management activities being emphasized in the plan alternatives, so the effects of each alternative on fish and wildlife populations can be estimated (Forest Service Manual 2605 and 2620). Page 324 of the draft environmental impact statement explains the process for selecting management indicator species.

The management indicator species selected were included in part for ease of monitoring as well as their value as an indicator of ecosystem health. Other species were considered but not included in the list based on the evaluation criteria.

Wildlife Corridors – General (62)

Concern Statement: The Forest Service should protect wildlife linkages and habitat connectivity for a variety of species. (62.02, 62.03, 62.04, 62.05, 62.06, 62.07, 62.08, 63.01, 63.03)

Response: The forest plan desired conditions in the "Animals and Rare Plants" section call for coordination with agencies, municipalities and private landowners to ensure habitat connectivity is maintained across the ecosystem management areas of the Coronado National Forest.

Concern Statement: The Forest Service should address the effects of climate change on wildlife linkages. (62.01)

Response: The forest plan desired condition in the "Animals and Rare Plants" section calls for the maintenance of wildlife corridors and for an adaptive management approach to address impacts from climate change.

Concern Statement: The Forest Service should include updated maps and models for connectivity in the region. (62.09)

Response: The map and boundary areas were selected using data from Arizona's Wildlife Linkages Assessment, an interagency effort available at http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp

Concern Statement: The Forest Service should encourage the use of wildlife-friendly fences and road infrastructure. (62.10)

Response: The forest plan desired conditions were intended to ensure that manmade features do not impede animal movement. Ramps have been or are being installed at many wildlife waters across the Coronado to allow smaller species access and egress from water sources.

Wildlife Corridors across International Border (63)

Concern Statement: The Forest Service should provide high-priority protection to the Patagonia and Santa Rita Mountains as a critical wildlife corridor to ensure viable bi-national connectivity in the region for black bears, jaguars, ocelots, willow-leaf oak, and other species. (63.02)

Response: Jaguar critical habitat emphasizes the management of moving corridors including the Patagonia and Santa Rita Mountains. The forest plan includes a guideline (guideline 1 in the "Animals and Rare Plants" section) which guides the forest to comply with signed recovery plans including the jaguar and ocelot. Other species will benefit including black bears. We do not manage for willow-leaf oak as they do not occur on the Coronado National Forest.

Recreation Management

Bicycling (2)

Concern Statement: The Forest Service should acknowledge that mountain biking groups assist with trail maintenance. (2.01)

Response: We appreciate volunteers and work by user groups. The plan provides recreation guidance (chapter 2, "Recreation," management approaches) that acknowledges these efforts.

Concern Statement: The Forest Service should retain existing and provide new mountain biking opportunities, including retaining the trails in Ku Chish, creating more beginner-friendly loops, creating more trails, creating more one-way trails, creating cross-country loops, and avoiding closing more trails. (2.02, 2.03, 2.04, 2.07)

Response: Providing mountain bike opportunities is addressed in the "Recreation" section (desired conditions, guideline 1, management approaches 14 and 20) and "Public Access" (guideline 4) sections in the plan. The Ku Chish Potential Wilderness Area is currently available for mountain biking. However, recommended wilderness areas may become congressionally designated wilderness areas and, at such time, mountain biking would be prohibited.

Concern Statement: The Forest Service should encourage mountain biking, because it supports health and the local economy. (2.04, 2.05)

Response: The forest plan supports mountain biking by providing a full array of recreational activities across the Coronado National Forest (see chapter 2; "Recreation" section desired conditions, and guideline 1). The environmental impact statement includes a socio-economic analysis that addresses the value of mountain biking (see chapter 3, "Communities, Collaboration, and Partnerships" section, "Economic Conditions and Trends" subsection.

Concern Statement: The Forest Service should open the Mount Graham area to mountain biking because the trails are well constructed and biking will not impair the wilderness character of the landscape. (2.06)

Response: The Mount Graham Astrophysical and Biological Research Area, designated in 1989 by the Arizona-Idaho Conservation Act, is closed to all recreation access including mountain biking. The designation of this research area and the associated closure to recreation access was not a forest plan decision. Mountain biking is currently allowed on designated National Forest System trails in the Mount Graham Wilderness Study Area. The forest plan makes a recommendation to designate the Mount Graham Wilderness Study Area as a wilderness area and provides guidance to maintain the wilderness characteristics of this area until Congress takes action. Upon wilderness designation by Congress, the Mount Graham Wilderness Study Area would be closed to mountain biking in accordance with the Wilderness Act of 1964. However, there are many trails available for mountain biking on Mount Graham outside the recommended wilderness area and outside the research area.

Developed Recreation and Facilities (13)

Concern Statement: The Forest Service should allow use of campgrounds, and picnic areas, provide a host at Cochise Stronghold, provide staffing at the Visitor Information Center, and prohibit new developed campsites in montane meadows. (13.01, 13.02, 13.03, 13.04)

Response: The plan would not preclude any of these suggestions. However, any proposal would need to go through site-specific analysis. The plan addresses the developed recreation sites and their locations in the "Recreation" section, in desired conditions and management approaches.

Dispersed Recreation Management (14)

Concern Statement: The Forest Service should disclose the amount of primitive and semi-primitive recreation opportunity spectrum classes that will be lost. (14.01)

Response: We define the recreation opportunity spectrum, including the primitive and semi-primitive classifications, in the glossary of the forest plan. A description of how the recreation opportunity spectrum applies to the forest plan can be found in chapter 2 in the "Recreation" section. The forest plan considered the recreation opportunity spectrum framework in the development of land use zones, which are management areas defined by types of uses and the desired settings that would occur within them. Table 2 in chapter 3 provides the acreages in each of these land use zones. It is unlikely there will be any loss of primitive or semi-primitive settings.

Concern Statement: The Forest Service should manage the forest to promote a dark, clear, and transparent sky to support the astronomy community. (14.04)

Response: Dark skies are described in chapter 4 of the forest plan in the desired conditions for the Nogales and Safford Ranger District geographic areas. Desired conditions for dark skies are described for geographic areas that include developed astrophysical sites. The desired conditions in the Santa Catalina Ranger District section of chapter 4 were modified to include consideration for dark skies.

Concern Statement: The Forest Service should provide for quiet recreation zones to protect lands and wildlife to reduce noise impacts and the creation of illegal trails. (14.05)

Response: The forest plan provides management direction for quiet recreation in chapter 3 in the "Land Use Zones," "Designated Wilderness Areas," "Recommended Wilderness Areas" and "Wilderness Study Areas" sections.

Concern Statement: The Forest Service should reconsider reducing areas available for dispersed camping because limiting the areas available will increase the use and damage to those areas. (14.06)

Response: Guidelines in the "Recreation" section of chapter 2 state recreation sites should be managed for capacities that do not cause unacceptable resource damage or impact the landscape character. Increasing the number of dispersed recreation campsites is not a plan-level decision. This concern would be determined at the project level on a case-by-case basis at a future date while taking this forest plan guideline into account.

Concern Statement: The Forest Service should close the Cochise area to climbing because climbing has caused significant damage. (14.07)

Response: The "Environmental Consequences" section in the "Recreation" section of chapter 3 addresses the effects of recreation activities, including rock climbing. Specific reference to the Cochise area, located on the Douglas Ranger District, can be found in chapter 4 of the forest plan. The "Recreation" section of chapter 2 in the forest plan further addresses rock climbing in the desired condition statement and in the following guideline:

> "Rock climbing should be managed to balance demand for the activity and the need to protect plants, animals, and other natural resources."

Concern Statement: The Forest Service should clearly document the locations of defined dispersed camping sites on the west side of the ecosystem management area in the Dragoon Mountains. (14.10)

Response: While the plan provides some guidance for managing dispersed recreation, identification of dispersed camping areas can generally be found on visitor use maps and is outside the scope of the forest plan decision.

Fees and Permits (19)

Concern Statement: The Forest Service should reconsider phasing out permits for isolated cabins, privately owned buildings, and residences and should retire permits for recreation residences as they expire. (19.01, 19.02)

Response: The plan does not preclude any of these suggestions. However, any proposal would need to go through site-specific National Environmental Policy Act analysis. There is guidance for phasing out permits in the plan in the following objective in the "Special Uses" section.

> "Phase out permits for isolated cabins and privately owned residences that are not part of the recreation residence program by 2028."

Concern Statement: The Forest Service should implement the national standard for recreational residences for cabin residences with special use permits to encourage owners to repair their buildings and improve the visual appeal of the area. (19.03)

Response: While the plan provides some guidance for managing recreation residences, compliance is generally covered in national policy and is therefore outside the scope of the forest plan. However, the plan includes some management guidance in the "Recreation" section, guideline 4; "Scenery" section, desired conditions and guideline 2; and "Special Uses" section, guideline 1.

Concern Statement: The Forest Service should improve public understanding and support of the recreation fee program to comply with the Federal Lands Recreation Enhancement Act. (19.04)

Response: Improving public understanding and support of the recreation fee program is not a plan-level decision. This is addressed at the project level on a case-by-case basis.

Concern Statement: The Forest Service should continue to allow use of summer recreation residences. (19.05)

Response: The forest plan supports the continued use of recreation residences, which are defined as privately owned, noncommercial residences located on National Forest System lands and authorized by a recreation residence term special use permit. The forest plan only recommends phasing out permits for isolated cabins, privately owned buildings, and residences that are not part of the recreation residence program.

Hunting, Shooting (22)

Concern Statement: The Forest Service should permit off-road motor vehicle use to retrieve big game where such use does not negatively affect soils or vegetation. (22.01)

Response: Off-road, motorized, big game retrieval is not a plan-level decision. This concern is addressed under the Travel Management Rule in travel management planning.

Concern Statement: The Forest Service should restrict hunting to ensure species are not overhunted and to protect public safety. (22.02, 22.03)

Response: Hunting is outside the scope of the forest plan, since it is managed by the Arizona and New Mexico Game and Fish Departments. This issue is addressed in the plan in the "Animals and Rare Plants" section, desired conditions, and management approaches.

Concern Statement: The Forest Service should restrict recreational shooting in some areas to provide safe recreation for other forest users and address the use of inappropriate targets (including glass). (22.04, 22.06)

Response: The plan would not preclude restricting recreational shooting in some areas or prohibiting inappropriate targets; however, any proposal would need to go through site-specific National Environmental Policy Act analysis.

Concern Statement: The Forest Service should prohibit hunting in the East Cochise Stronghold to provide for the safety of other users. (22.05)

Response: While this is not a plan-level decision, East Cochise Stronghold is currently closed to hunting.

Motorized Recreation Management (34)

Concern Statement: The Forest Service should acknowledge that there is little evidence that aviation activities are a threat to nesting raptors.

Response: Related statements from the draft plan and draft environmental impact statement have been removed from the final plan and final environmental impact statement.

Concern Statement: The Forest Service should add new routes and looping routes, such as single track trails and routes that provide a backcountry experience. (34.01, 34.02, 34.07, 34.21, 34.23)

Response: The forest plan addresses this issue in chapter 2, "Motorized Transportation System," management approaches, and in "Recreation," management approaches.

Concern Statement: The Forest Service should add the phrase "motorized single track" to the terms semi-primitive nonmotorized and semi-primitive motorized. (34.02, 34.20)

Response: This is not a forest plan-level decision. Adding "motorized single-track" to semi-primitive nonmotorized and semi-primitive motorized is already addressed in Forest Service policy.

Concern Statement: The Forest Service should include a standard limiting the use of vehicles to below 96 decibels. For all areas not identified for motorized recreation. (34.03)

Response: The forest plan addresses this issue in chapter 2, "Motorized Transportation System," through travel management. Areas not identified for motorized recreation have no motorized use.

Concern Statement: The Forest Service should limit or restrict motorized recreation to protect quiet settings, wildlife, cultural resources, and vegetation. (34.05, 34.08, 34.09, 34.10, 34.16, 34.25, 34.26, 34.27)

Response: These issues are addressed in chapter 2, "Motorized Transportation System," "Recreation," and chapter 3, "Management Areas."

Concern Statement: The Forest Service should partner with motorized groups to assist in trail creation and maintenance. (34.06)

Response: The forest plan addresses this in chapter 2, "Forestwide Management," "Recreation," management approaches.

Concern Statement: The Forest Service should include ongoing maintenance for motorized travel management. (34.11, 34.14)

Response: The forest plan addresses this in the "Forestwide Management," "Motorized Transportation System" section.

Concern Statement: The Forest Service should update the motorized recreation direction in the plan to address changes in population, behavior, and increased development. (34.12)

Response: The forest plan addresses this in the "Forestwide Management," "Motorized Transportation System," through the travel management process.

Concern Statement: The Forest Service should ensure that motorized access by special permit will be limited to that specific purpose to eliminate the ability to profit from exclusive access to the forest in the Galiuro Ecosystem Management Area. (34.13)

Response: Motorized access by special use permit is not a plan-level decision. The special use permit will be determined at the project level on a case-by-case basis.

Concern Statement: The Forest Service should proceed with the desired condition related to motorized recreation. (34.15)

Response: The forest plan will allow the Forest Service to proceed with the desired conditions related to motorized recreation.

Concern Statement: The Forest Service should acknowledge that the plan allows motorized vehicles on less than 1 percent of the forest. (34.17)

Response: Motorized recreation opportunities are available in all land use zones, which constitutes the majority of the Coronado National Forest (see environmental impact statement, table 2). However, off-road travel is prohibited on the majority of the Coronado.

Concern Statement: The Forest Service should consider implementing the National Off-Highway Vehicle Conservation Council guidelines. (34.18, 34.19)

Response: The plan would not preclude incorporating national off-highway vehicle guidelines. This is addressed in the plan in chapter 2, "Forestwide Management," "Motorized Transportation System," management approaches.

Concern Statement: The Forest Service should minimize the impacts from motorized recreation to comply with Executive Order 11644 and to protect special-status species. (34.24)

Response: While the plan provides guidance for managing impacts from motorized recreation, compliance with Executive Order 11644 is covered in national policy and is outside of the scope of this forest plan decision.

Concern Statement: The Forest Service should require permits for off-highway vehicles, jeeps, and other 4x4s to help fund trail repairs. (34.28)

Response: Requiring permits for motorized recreation is not a plan-level decision. The need for this will be determined on a case-by-case basis. Currently, the Forest Service collects fees through outfitter and guiding permits that can be used to maintain roads and trails. Additionally, the State of Arizona currently collects funds for off-highway vehicles, motorcycles, and some jeeps (through their off-highway vehicle program), which are dispersed though a grant process to maintain trails and roads.

Concern Statement: The Forest Service should control off-road vehicle use in the Redington Pass area. (34.29)

Response: Addressing off-road vehicle use in specific areas is not a forest plan-level decision. Decisions relating to the control of off-road vehicle use are made during travel management planning. However, the forest plan designates land use zones for the Santa Catalina Ranger District in the Redington Pass area as motorized recreation and roaded backcountry. Non-roaded areas are designated as wild backcountry. This can be found in chapter 4, “Geographic Areas,” “Santa Catalina Ranger District.”

Concern Statement: The Forest Service should revise the Douglas Ranger District map to remove indicated access through private property. (34.30)

Response: This is not a plan-level decision. This will be addressed during travel management map updates.

Recreational Access (46)

Concern Statement: The Forest Service should design and develop trails that provide visitor experiences that are in demand to address the root causes of illegal trail construction. (46)

Response: The existing network of system roads and trails is inevitably based on a legacy system. If resources were unlimited, the system could be changed as needed to be the best possible system based on any number of criteria. As it currently exists, there are not enough resources to maintain the existing system, let alone to construct more system. The existing legal, policy and regulatory framework (mostly travel management and the National Environmental Policy Act) currently does not allow for the Coronado’s network to be substantially reduced. Therefore, only small and focused changes are reasonable options. The forest plan would not preclude the creation of new trails and access; however, any proposal would need to go through site-specific analysis.

Concern Statement: The Forest Service should do the following for the Arizona National Scenic Trail: include a guideline protecting the trail, reconsider the desired conditions to allow for needed improvements and allow for construction of needed roads, and include cooperative management strategies with State and county agencies. (46.01, 46.02, 46.04, 46.06)

Response: The forest plan would not preclude the inclusion of these concerns; however, any proposal would need to go through site-specific National Environmental Policy Act analysis. As stated in chapter 3 under the Arizona National Scenic Trail guidelines, trail protection is offered through the management of permitted special uses, placement of new road or motorized trail construction, placement of new utility corridors and utility lines, management of forest health projects and fire suppression to minimize impacts. Needed improvements are not precluded from desired conditions and forest plan allows that, near towns and developed recreation facilities, the Arizona Trail may become a more accessible and highly developed route with access to amenities via connector trails.

As stated in "Management Approaches" section, we will work with adjacent landowners and agencies to maintain the trail corridor and the condition and natural character of the surrounding landscape. Furthermore, the trail will be managed consistent with the 1995 Arizona Trail Management Guide until a comprehensive management plan is completed. The 1995 Arizona Trail Management Guide includes minimum trail maintenance guidelines and calls for Arizona Trail Segment Stewards (volunteers) to work with local land management agencies on trail construction and maintenance. When the trail comprehensive management plan is completed, it will provide more detailed site-specific guidance for the trail which falls within the framework of the forest plan.

Concern Statement: The Forest Service should retain or expand the existing recreational access to address increasing usage rates. (46.03)

Response: The plan addresses this topic in chapter 2, "Forestwide Management," "Public Access".

Concern Statement: The Forest Service should clarify the intent of Public Access guidelines 3 and 4. (46.05)

Response: Guideline 3 has been edited to add the words "Creation of or continued use" to the beginning of the sentence. This will clarify guideline 4. Use of National Forest System lands is not exclusive.

Forest Service Manual 2734 states:

> " . . . use, and maintenance of roads, trails, and highways across National Forest System lands all require some form of authorization."

Forest Service Manual 2730 states that whenever the Forest Service has current need for access across the lands of a party who is requesting access across National Forest System lands, the receipt of an adequate right-of-way from that party must be a condition of granting an easement.

Forest Service Manual 2730.2 states:

> "Cooperate with intermingled and adjacent landowners in developing roads that serve the needs of both parties through the exchange of rights-of-way."

Forest Service Manual 2733.03 states:

> "The permits or easements granted are nonexclusive."

Concern Statement: The Forest Service should create a new trails (1) to connect the Pallisades parking area to the Sunset trail area, (2) from the Butterfly trailhead to the Control Road, (3) to connect Crystal Spring and the Control Road to the top of the Control Road, and (4) to connect Green Mountain and the top of the initial climb of Bug Spring Trail. (46.07, 46.08, 46.10, 46.12)

Response: The plan would not preclude the creation of new trails and access; however, any proposal would need to go through site-specific National Environmental Policy Act analysis. Forest Service Manual 5460.3 encourages the acquisition of rights-of-way to National Forest System lands. As access opportunities arise, they are worked on a case-by-case basis.

Concern Statement: The Forest Service should provide greater public access to address increasing population pressures to the Pinaleño Ecosystem Management Area, the Santa Teresa Ecosystem Management Area, and the Winchester Ecosystem Management Area to improve opportunities for dispersed recreation. (46.09)

Response: The plan would not preclude providing greater public access in the Pinaleño, Santa Teresa, and Winchester Ecosystem Management Areas; however, any proposal would need to go through site-specific National Environmental Policy Act analysis. Forest Service Manual 5460.3 encourages the acquisition of rights-of-way to National Forest System lands. As access opportunities arise, they are worked on a case-by-case basis.

Concern Statement: The Forest Service should proceed with the plan as it relates to public access to allow legal, motorized access and to prohibit exclusive access by private developments and landowners. (46.11)

Response: The plan addresses public access to allow legal motorized access and to prohibit exclusive access.

Recreation Management (45)

Concern Statement: The Forest Service should increase the recreation facilities on the Peloncillo Management Area to enhance the economic benefit to local communities. (45)

Response: The plan would not preclude increasing recreational opportunities and facilities; however, any proposal would need to go through site-specific analysis.

Concern Statement: The Forest Service should analyze impacts from recreation including those resulting from increased recreational usage. (45.02)

Response: The environmental impact statement acknowledges population growth and increased use of the Coronado National Forest. The 1986 plan lacks specific direction to address increased use and associated impacts. The revised plan includes plan components that are responsive to recreation trends. The effects of increased recreation are not analyzed as part of the forest plan but the environmental impact statement acknowledges the population growth of southern Arizona and associated increased recreation use.

Concern Statement: The Forest Service should emphasize quiet recreation in the plan: because these activities do not disturb the ecological balance and support the local economy; because solitude is difficult to find; to limit effects of motorized use in Gardiner Canyon; and to be consistent with the desire of the majority of the public. (45.03)

Response: The forest plan emphasizes quiet recreation (solitude) in wilderness, wild backcountry, and other areas, which comprise most of the national forest. In chapter 2, “Forestwide Management,” in the “Recreation” section of the plan, a management approach has been added to emphasize quiet recreation. In addition, plan components support wildlife habitat protection of threatened and endangered species, which reduces noise seasonally. The plan

includes a land use zone for motorized recreation, which is intended to concentrate off-highway vehicle use.

Concern Statement: The Forest Service should maintain and preserve recreational opportunities and the recreation residence program, and ensure that public access is addressed. (45.05, 45.11, 45.12)

Response: The forest plan supports these concerns. See chapter 2, "Recreation," "Special Uses," and "Public Access."

Concern Statement: The Forest Service should revise the plan to acknowledge that visitation is down at Cave Creek Canyon. (45.06)

Response: Acknowledgement of visitation numbers at Cave Creek Canyon is outside the scope of the plan.

Concern Statement: The Forest Service should consider formalizing some user-created trails. (45.07, 45.08, 45.13)

Response: The plan does not preclude increasing recreational opportunities; however, any proposal would need to go through site-specific National Environmental Policy Act analysis.

Concern Statement: The Forest Service should avoid singling out rock climbing as causing recreation impacts and should include the impacts of other activities as well because there is no evidence to support the assertion that climbing is more impactful than other activities. (45.09)

Response: The plan and environmental impact statement address impacts from multiple recreation activities. In the plan, these are primarily found in the "Recreation" and "Motorized Transportation" sections. In the environmental impact statement, recreation impacts are primarily addressed in chapter 3, "Visitor Experience," "Recreation," and "Motorized Activities" sections. Guideline 6 in the plan addresses rock climbing:

> "Rock climbing should be managed to balance demand for the activity and the need to protect plants, animals and other natural resources."

We think the growing interest and participation in rock climbing is a positive trend in recreation and natural resource stewardship. In our view, this guideline does not limit rock climbing and will enhance the rock climbing experience for all.

Concern Statement: The Forest Service should reconsider use of the terms "quiet recreation" and "quiet experiences" because they are subjective and reflect a bias against human uses. (45.14)

Response: Through our public scoping process for the plan, we identified five topics for the revised plan to address, where changes in management direction were needed. One of those topics, "Visitor Experiences," included a need to address the slow loss of opportunities for quiet recreation. According to our public input, quiet recreation is a valued human use of the Coronado National Forest. We disagree that using the terms "quiet recreation" and "quiet experiences" reflects a bias against human uses.

Concern Statement: The Forest Service should revise descriptions for the Whetstone, Galiuro, Santa Teresa, Winchester, and Santa Catalina Ecosystem Management Area desired conditions to provide a more balanced description of the recreational settings available. (45.01, 45.04, 45.15, 45.16)

Response: Desired conditions for the Whetstone, Galiuro, Santa Teresa, Winchester, and Santa Catalina Ecosystem Management Areas reflect the dominant recreational settings that are desirable. They are not all-inclusive of the available settings but do reflect the type of access and facilities desired in those places.

Other Activities Management (37)

Concern Statement: Within the Mount Graham Astrophysical and Biological Research Area: the Forest Service should prohibit timber harvest; and the Forest Service should better define what traditional forest products can be harvested and at which level is appropriate. (37)

Response: Table 14 states timber harvest is only allowed in the Mount Graham Astrophysical and Biological Research Area for ecosystem restoration. Development of site-specific project recommendations for ecosystem restoration that would include removal of woody material would undergo review by appropriate resource specialists during the National Environmental Policy Act process and is outside the scope of the forest plan.

Concern Statement: The Forest Service should address the how the biomass industry could affect national forests and climate change impacts. (37)

Response: At this time, southern Arizona does not have a biomass industry that utilizes product from the Coronado National Forest and there is no foreseeable development of that industry. The environmental impact statement did disclose effects to forest products of the various alternatives, and how climate change may impact the availability of forest products such as fuelwood and saw timber. Forest products, especially those derived from wood fiber, would become available as a result of ecosystem restoration, habitat improvement, and fuels treatment projects. There is no timber resource suitable for commercial harvest on the forest.

Concern Statement: The Forest Service should analyze proposals for infrastructure development and advocate for the protection of unique features. (37)

Response: This is outside the scope of the forest plan and would be addressed on a site-specific case-by-case basis.

Concern Statement: The Forest Service should disclose the impacts of removing rights-of-way and utility line corridors. (37)

Response: The final environmental impact statement does not address the potential economic impacts and unintended consequences to other entities through the dissuading influence of the forest plan on future long-term or permanent encumbrances on some National Forest System lands. These issues would be addressed at the project level should public benefits outweigh the costs of the encumbrances.

Concern Statement: The Forest Service should improve the caves and karsts section by having a separate land use designation and/or a separate standalone section because they are a significant and complex resource that should be managed more effectively. Part of the cave and karst section should reference supplied cave and karst management documents. In particular, Cave Canyon in the Huachuca Mountains, Cave Canyon in the Santa Rita Mountains, and Peppersauce Cave should be protected because they are fragile resources and Peppersauce Cave is one of the biggest vandalism problems on the forest. To mitigate disturbance a 300-foot buffer zone around cave entrances should be created. A separate cave and karst management document should be

completed for changes not part of the forest plan. (37.02, 37.04, 37.05, 37.06, 37.08, 37.10, 37.12)

Response: Cave and karst land use designation is not warranted as caves and karst topography fit well under biophysical features. We agree a cave and karst management guide is needed and we are currently developing one. This type of information is provided in the "Guidelines" section, though more detailed prescriptions would be provided for in the cave and karst management plan. Additional management guidelines are being developed in coordination with cave and karst stakeholders through the cave management plan process. As stated in the standards, caves that have been designated or nominated as "significant," are managed to perpetuate those features, characteristics, values, or opportunities for which they were designated.

Concern Statement: On page 54, the Forest Service should revise the text to: (1) replace the word "often" with "may" and (2) amend the list of cave resources to include historical and archeological deposits, hydrological, and recreation resources. (37.07, 37.11)

Response: Your suggestion has been incorporated into the forest plan on page 54.

Concern Statement: The Forest Service should coordinate with cave and karst experts to ensure the plan includes adequate information on cave and karst management. (8.01)

Response: Cave resources are addressed in the forest plan in the "Biophysical Features" section. This section includes the following Management Approach: "Engaging caving organizations in cave management activities, such as seasonal surveys, closures, and wildlife-friendly gate development at specific sites." The Forest Service also has policy and directives associated with cave and karst management (such as Forest Service Manual 2880). In addition, a cave management plan has recently been developed in collaboration with local Grottos. The forest plan incorporates this plan by reference.

Lands Management

Land Designations and Management (29)

Concern Statement: The Forest Service should discuss the two National Natural Landmark (NNL) sites. (29)

Response: Thank you for your comment. The forest plan and final environmental impact statement have been updated to include descriptions of these two national natural landmark sites. The plan components for the two geographic areas in which the national natural landmark sites are located provide adequate protection for the two landmarks.

Concern Statement: The Forest Service should revise the Galiuro Ecosystem Management Area objectives to continue to provide access to the area. (29)

Response: The forest plan would not preclude providing access; however, providing access in specific areas is not a forest plan-level decision. Any restrictions or additions to motorized travel on the Coronado would be considered during the travel management planning process. Site-specific travel management planning will use the framework set by the plan (such as desired conditions, standards, and guidelines) and will consider potential resource impacts, access needs, public input, and alternative views. If issues resulted from open roads, they could be addressed through site-specific analysis.

In addition, the plan contains standards and guidelines for limiting motorized travel to designated roads and trails, and sets the framework for implementing the Travel Management Rule (see the "Motorized Transportation System" section, in chapter 2 of the plan).

Concern Statement: The Forest Service should reconsider the designation of the Cave Creek Canyon Birds of Prey area to avoid creating unnecessary restrictions on use because the costs and benefits of designation have not been fully disclosed. (29)

Response: The final plan and final environmental impact statement explain why the area is being proposed and includes the following standards and plan components:

> In the South Fork of Cave Creek Zoological-Botanical Area and the proposed Cave Creek Canyon Birds of Prey Zoological-Botanical Area:
>
> - A special use permit is required for any plant or animal collection.
> - A special use permit is required for scientific research that would involve placing anything on forest lands within the proposed zoological-botanical area.

These standards and plan components should not impact the average citizen visiting the area or most residents in the area.

Concern Statement: The Forest Service should clarify the reason for the increased size of the study area for the Cave Creek Canyon Bird of Prey Zoological Botanical Area. (29)

Response: We are not sure which part of the document this concern statement is referencing. The size of the Cave Creek Bird of Prey Zoological-Botanical Area was proposed as 26,241 acres in the draft plan but is now proposed as 25,764 acres in the final plan.

Concern Statement: The Forest Service should remove the reference to the Atascosa Lookout in the Tumacori Ecosystem Management Area because it has burned down. (29)

Response: The desired conditions for the Tumacacori Ecosysten Management Area have been updated in the forest plan to reflect that the Atascosa Lookout is no longer present.

Concern Statement: The Forest Service should clarify the description and location of the proposed Canelo Research Natural Area and explain why the area is needed. (29)

Response: The location of the proposed Canelo Research Natural Area was incorrectly identified in the draft land and resource management plan. The proposed Canelo Research Natural Area would set aside 386 acres of National Forest System lands in the southern portion of the Appleton-Whittell Research Ranch not the Elgin Research Ranch. This proposed research natural area will be managed to allow for monitoring long-term ecological changes in the absence of livestock grazing in an open oak (encinal) woodlands vegetation community.

Concern Statement: The Forest Service should include priority criteria for access within the Ecosystem Management Areas to explain how the sequence was determined and what factors could cause an adjustment. (29)

Response: Legal public access to any block of National Forest System land requires documented, legally supportable right to cross lands owned by one or more entities other than the Forest Service. Other than legal condemnation, to obtaining legal access requires other landowners to voluntarily cooperate with the Coronado and its partners, such as the Arizona Game and Fish

Department. Such cooperation usually involves payment and always involves the willing cooperation of the landowner. Successful acquisition of legal access occurs when a willing landowner and the agencies involved reach mutual agreement on the terms of the access—including payment. In most cases, no payment or appraised value can induce an unwilling landowner to cooperate. Rather than prioritizing access, we believe working with cooperative landowners and cooperating agencies will prove successful.

Concern Statement: In addition to the current proposed special management/interest areas which include Finger Rock Canyon Research Natural Area, Cave Creek Canyon Birds of Prey Zoological Area, Pole Bridge Research Natural Area, Gooding Research Natural Area and Alder Canyon Research Natural Area, the Forest Service should add Agua Caliente Zoological Area, Alder Canyon Research Natural Area, Aliso Springs Riparian Preserve, Barfoot Zoological Area, Cañada del Oro Headwaters Research Natural Area, Madera Canyon Zoological-Botanical Area, Redrock Canyon Management Area, Rosemont Valley Historic Area, Scotia Canyon Zoological-Botanical Area, and Southern Peloncillo Mountains Zoological-Botanical Area. The Forest Service should also include areas proposed by the Coronado Planning Partnership which includes the 10 Citizen's Proposal and those proposed by Sky Island Alliance. Important Bird Areas should also be designated as special areas. These designations should occur to protect the areas, attract tourism, and attract nonmotorized recreationists. (29.01, 29.07, 29.09, 29.27, 29.43, 29.45)

Response: We are glad you support the proposed designations of research natural areas and zoological-botanical areas in the forest plan. Several of these were proposed by the Coronado Planning Partnership and Sky Island Alliance. In response to the proposals regarding other special areas, the forest plan contains the following guidance:

- The unique values of Alder Canyon are perpetuated (chapter 4, "Santa Catalina Ecosystem Management Area," desired conditions).
- Aliso Springs provides habitat for native aquatic species.
- The wildlife and vegetation species in the area surrounding Barfoot Park are perpetuated (chapter 4, "Chiricahua Ecosystem Management Area," desired conditions).
- Wilderness areas within Madera Canyon shall be managed at the highest possible scenic integrity level, with a level of very high (chapter 4, "Santa Rita Ecosystem Management Area," standard).
- Perennial streams, including Bear Canyon, Scotia Canyon, and Red Rock Canyon, provide year-round habitat for aquatic species. These streams generally have at least permanent pools of water, even when continuous flows cease during the driest seasons (chapter 4, "Huachuca Ecosystem Management Area," desired conditions).
- Species that have historically moved freely between habitat in Mexico and within the Peloncillo Ecosystem Management Area continue to do so (chapter 4, "Peloncillo Ecosystem Management Area," desired conditions).
- Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Peloncillo Ecosystem Management Area, these species include, but are not limited to, Chiricahua mudwort, Copper mine milk-vetch, New Mexico bitterweed (chapter 4, "Peloncillo Ecosystem Management Area," desired conditions).

It should be noted that, as shown in the map of the Peloncillo Ecosystem Management Area in chapter 4, much of the southern Peloncillo Mountains already have special designations; the Bunk Robinson Wilderness Study Area will be managed to preserve wilderness character (chapter 3, Management Areas, Recommended Wilderness Areas and Wilderness Study Areas) and the Guadalupe Canyon Zoological-Botanical Area will be managed to perpetuate the unique resources that led its designation (chapter 4, Peloncillo Ecosystem Management Area).

Further, the Forest Service has submitted applications for instream flow water rights in Red Rock Canyon and Scotia Canyon. Obtaining these rights will be paramount in sustaining the unique resources in those canyons.

For the rest of the areas, we agree they all have unique characteristics that should be perpetuated. We believe the forest plan provides management direction that will sustain those characteristics and determined that additional designation was not needed.

Concern Statement: The Forest Service should expand the Elgin Research Natural Area to include the portion within the Appleton-Whittell Research Ranch. (29.04)

Response: Desired conditions for the Elgin Research Natural Area and the Appleton-Whittell Research Ranch are found in the forest plan in chapter 4, "Geographic Areas," "Huachuca Ecosystem Management Area." They are managed in concert with each other. Each provides unique opportunities for researching grasslands. We believe the areas are complementary, and there would be no benefit to combining them into one research natural area.

Concern Statement: The Forest Service should protect wild and scenic rivers from the effects of mineral extraction. (29.08)

Response: The Coronado National Forest has eligible wild and scenic rivers, which are not currently withdrawn from mineral entry. The Forest Service direction for withdrawals is outlined in Forest Service Manual 2760. Generally, a withdrawal is a management tool for withholding an area of National Forest System land from settlement, sale, location, or entry under some or all of the general land laws, including the mining and mineral leasing law, for the purposes of limiting activities under those laws in order to maintain other public values in the area, or reserving the area for a particular public purpose or program. These programs and purposes may include quality of scientific, scenic, historical, ecological, environmental, air, water resource, archaeological values, or other special purposes. Before recommending an administrative withdrawal for a certain area, the Forest Service must comply with the requirements under 43 CFR 2310.1-2 for consideration of alternative protection opportunities such as a right-of-way under section 507 of the regulation (43 U.S.C. 1767) or a cooperative agreement under sections 302(b) (43 U.S.C. 1732(b)) and 307(b) (43 U.S.C. 1737(b)) of the regulation, or other protection methods. These requirements are restated in the forest plan as guidelines under chapter 2 in the "Land Ownership Adjustments and Boundary Management" section. There are currently no designated wild and scenic rivers.

Concern Statement: The Forest Service should avoid reducing the size of the existing Santa Catalina Research Natural Area. (29.25)

Response: The proposed reduction is carried forward from the 1986 plan. The reduction was proposed to eliminate areas that were heavily used as dispersed camping areas, which is an incompatible use in a research natural area. In addition, the boundary of the Santa Catalina

Research Natural Area was assessed as part of the research natural area assessment for the Coronado National Forest. This assessment supported the area proposed in the 1986 plan.

Concern Statement: The Forest Service should plan management of the zoological-botanical areas using a team of local research, business, and recreation interests. (29.26)

Response: The forest plan supports collaboration of all sorts and does not preclude collaboration in management of zoological botanical areas.

Concern Statement: The Forest Service should acknowledge that the Cave Creek Zoological-Botanical Area Fact Sheet may be misleading. (29.34)

Response: We did not generate a fact sheet associated with the Cave Creek Zoological-Botanical Area, and are not responsible for its content.

Concern Statement: The Forest Service should reword the first sentence of the wild backcountry general description to broaden the character and scope of the definition to ensure the public understands these areas are not managed as wilderness. In particular the first sentence should state: "The wild backcountry land use zone is managed . . . to support a range of primitive and semi-primitive recreational settings" and the description should include the following: "This land use zone is managed for primarily for a range of nonmotorized uses and motorized backcountry access. It includes Inventoried Roadless Areas, areas adjacent to Wilderness areas, other relatively primitive areas, and motorized access roads. This zone offers recreational opportunities in the primitive to semi-primitive recreation opportunity spectrum. It makes up 628,500 acres, or about 35 percent of the Coronado National Forest." (29.22, 29.24, 29.28)

Response: We determined the proposed wording was not substantially different and the existing wording is more concise. Therefore, no changes were made between the draft and final versions of the revised plan.

Concern Statement: Wild backcountry should be an extension of wilderness and motorized uses should be prohibited. In addition, the Forest Service should proceed with the designation of the Dragoon Ecosystem Management Area because resources will be protected from off-road motorized travel. (29.33, 29.40, 29.46, 29.52)

Response: The Wild Backcountry Land Use Zone is, for the most part, adjacent to wilderness areas. It allows existing roads to remain, and new roads are only allowed if they replace lost access. By allowing these roads to remain, wilderness areas are more accessible. Therefore, we believe allowing motorized uses in wild backcountry zone provides experiences that are different from, but complementary to, wilderness. The Dragoon Potential Wilderness Area was considered in the environmental impact statement under alternative 1. It was not recommended for wilderness designation.

Concern Statement: The Forest Service should re-designate some roads as motorized increasing roaded access into the Wild Backcountry zone within all geographical areas and should explain how this designation influences travel management NEPA. (29.06, 29.13, 29.30)

Response: The road designation is not a forest plan decision. However, travel management decisions are guided by the forest plan, including plan components for the Wild Backcountry Land Use Zone. The effects of designation of land use zones to various resources are disclosed in

chapter 3 of the environmental impact statement. All decisions for travel management are required to be consistent with the forest plan.

Concern Statement: The Forest Service should revise the description of roaded backcountry as the description is too narrow. It should be broadened to reflect that remote areas offer a range of semi-primitive recreational settings (both motorized and nonmotorized) where visitors can car camp, hike, hunt, and explore the forest and where there is a moderate probability of experiencing solitude. In the first sentence under "General Description" and in the second sentence under "Desired Conditions," we recommend the term "quiet recreation" be deleted and replaced by standard terminology from the recreation opportunity spectrum. In addition, how will an emphasis on quiet recreation in roaded backcountry affect travel management? (29.03, 29.21, 29.35)

Response: We determined the proposed wording was not substantially different and the existing wording is more concise. Therefore, no changes were made between the draft and final versions of the revised plan.

The forest plan provides guidance for quiet recreation in the form of desired conditions for wilderness and Wild Backcountry and Roaded Backcountry Land Use Zones. Decisions for decommissioning roads are not made in the forest plan but at a project level through the travel management process. The travel management process provides analysis of roads proposed to be decommissioned from the existing motorized transportation system for many reasons, including providing opportunities for quiet recreation.

Concern Statement: The Forest Service should reconsider merging the designation of the Mount Graham Biological Research Area and the Mount Graham Astrophysical Site because these areas have different purposes and the uses are incompatible. (29.18, 29.29)

Response: The Mount Graham Astrophysical and Biological Research Area was designated in 1989 by the Arizona-Idaho Conservation Act; the area encompasses 2,881 acres. Modifying the direction of the act is outside of the scope of the plan.

Concern Statement: The Forest Service should ensure that public access [vehicular] is maintained into all the ecosystem management areas including wilderness for holders of property rights and those with transportation easements within these areas. (29.12, 29.17, 29.19, 29.32)

Response: The forest plan supports motorized access to all ecosystem management areas. Management direction for access is found in chapter 3 of the forest plan. Motorized access into designated wilderness is prohibited by the Wilderness Act. Decisions to close or restrict access on specific roads were made during travel management planning. As part of that process, we identified the road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. Roads needed for transportation easements and holders of property rights were identified during that process. Roads not designated for motor vehicle use or displayed on the motor vehicle use map that are authorized by permitted use will be available to permittees under the terms of their permits.

Concern Statement: The Forest Service should rework the desired conditions for each ecosystem management area as the draft desired conditions give an unbalanced view of recreational use: [they] over-emphasizes nonmotorized (quiet) recreation while generally avoiding any mention of motorized access/recreation. (29.38)

Response: We disagree that the ecosystem management area desired conditions give an unbalanced view of recreation use. Through our public scoping process for the plan, we identified five topics for the revised plan to address, where changes in management direction were needed. One of those topics, "Visitor Experiences," specifically included a need to (1) address the slow loss of opportunities for quiet recreation, (2) provide overall guidance for motorized use the Travel Management Rule will reflect, and (3) address general suitability of motorized uses in different areas of the Coronado National Forest.

The plan addresses these concerns in the ecosystem management area desired condition statements by providing guidance for (1) a full spectrum of recreation activities and for (2) adequate legal road access (see chapter 4, "Ecosystem Management Areas," desired conditions). Another of the five topics, "Access to National Forest System Lands," recognizes the need for legal rights-of-way for many areas of the national forest, primarily for roads available for motorized use. The plan addresses this concern by identifying and prioritizing public access needs, including motorized access. Forestwide, there are desired conditions for arterial, collector and local roads; and for a motorized transportation system that is environmentally sustainable and meets public needs and desires. There is also an objective for increasing the number of permanent legal access routes, and objectives for maintaining 350 miles of roads every year (see chapter 2, "Forestwide Management," "Motorized Transportation System," and "Public Access" sections).

Concern Statement: The Forest Service should continue to manage the Chiricahua Ecosystem Management Area to protect the natural character of the landscape and acknowledge that the National Audubon Society has designated this area as an Important Bird Area. Additionally, the Peloncillo Ecosystem Management Area should continue to be managed for livestock grazing and dispersed recreation. (29.49, 29.50, 29.51)

Response: The forest plan supports continuing to manage the Chiricahua and Peloncillo Ecosystem Management Areas to protect the natural character of the landscape and the unique resources they contain. We have added an acknowledgement of the National Audubon Society important birding area designation to the description section of the Chiricahua Ecosystem Management Area. The forest plan supports this designation with the establishment of the Cave Creek Birds of Prey Zoological-Botanical Area. The forest plan also supports a continuation of livestock grazing and dispersed recreation in the Peloncillo Ecosystem Management Area.

Concern Statement: The Forest Service should ensure that designations are made in accordance with the spirit and direction of the acts/regulations that created them and ensure they (the designations) are reproducible by scientific data to avoid single purpose or non-use which may negatively impact Arizona Game and Fish Department wildlife management, the local economy, lifestyles, cultures, and/or heritage. (29.11, 29.37, 29.39)

Response: We understand your concern that special areas should not be designated for a single purpose or in a way that would negatively impact Arizona Game and Fish Department wildlife management, the local economy, lifestyles, cultures, or heritage. The forest plan proposes three types of management areas (designations): special areas, land use zones, and ecosystem management areas (geographic areas). Special areas are established at a national level through legislation (such as wilderness) or at a regional or local level through administrative action. Land use zones are defined by the types of uses and desired settings that would occur in them and ecosystem management areas are defined geographically to include one or more mountain ranges. Management areas are further described under the forest plan decisions section of chapter 1.

Special areas and management areas (designations) are components of the forest plan but are not plan decisions.

All lands in the Coronado National Forest are managed for multiple uses under the Multiple Use-Sustained Yield Act, and they will not be managed for a single purpose. While there may be restrictions on some uses in some management areas, such as wilderness, opportunities for those uses will continue to exist outside wilderness. In our analysis of the forest plan, no negative effects of lands designations in the forest plan to wildlife management, local economies, lifestyles, cultures, or heritage were found, as disclosed in chapters 2 and 3 of the environmental impact statement. Chapter 5 of the forest plan discusses suitability for land uses where suitability is defined as the appropriateness of applying certain resource management practices (uses) to a particular area of land. Table 14 of chapter 5 identifies activities that may be allowed on Coronado National Forest and is not inclusive of all activities that may be considered. The identification of an area as suitable for various uses is guidance for project and activity decision making and is not a resource commitment or final decision; these would be made at the project level. Suitability is determined based on our team process done in accordance with the forest service manual and Southwestern Region guidance paper.

Land Ownership, Uses (30)

Concern Statement: The Forest Service should convey grazing lands along its boundaries to private ownership to preserve open space. (30.01)

Response: This is outside the scope of the forest plan. There are no Federal authorities allowing transfer of National Forest System lands to private ownership to preserve open space. National Forest System lands are, by nature, open spaces, and transfer to private ownership would not improve open spaces nor guarantee open space in perpetuity.

Concern Statement: The Forest Service should revise the Douglas Ranger District map to remove indicated access through private property. (30.02)

Response: This is outside the scope of the forest plan. Routes shown on the Coronado's recreation maps do not indicate legal access. They show the locations of the roads on the ground. As private land ownership changes, access through those lands may also change.

Concern Statement: The Forest Service should acknowledge that the State and Federal Governments hold a sufficient amount of land to protect public interest. (30.03)

Response: This is beyond the scope of the forest plan. This forest plan only deals with the management of the National Forest System lands in the Coronado National Forest.

Concern Statement: The Forest Service should acknowledge that private property owners have the right to dispose of or exchange their property as they see fit within applicable law. (30.04)

Response: This is beyond the scope of the forest plan. The Forest Service has no control over private lands.

Concern Statement: The Forest Service should object to development along the forest boundary because these areas pose significant fire management challenges. (30.05)

Response: This is beyond the scope of the forest plan. The Forest Service has no control over development of private lands adjacent to its boundaries. The Forest Service provides comments to

county and city entities on private land development proposals whenever possible, to address access and fire prevention and suppression issues.

Concern Statement: The Forest Service should revise the standards for the Mount Graham Red Squirrel Refugium to ensure that the Mount Graham Observatory will not be expanded. (30.06)

Response: The permit to the University of Arizona for the Mount Graham International Observatory only allows use of 8.6 acres.

Concern Statement: The Forest Service should move forward with the acquisition of the land between the Galiuro Ecosystem Management Area and the Winchester Ecosystem Management Area. (30.07)

Response: This is beyond the scope of the forest plan. The Forest Service can only act upon specific land acquisition proposals through the General Land Exchange Act or through another act of Congress.

Concern Statement: The Forest Service should acquire adjacent or proximate non-Federal lands to enhance public access to the forest. (30.08)

Response: This is beyond the scope of the forest plan. The Forest Service can't acquire lands outside of the congressionally designated national forest boundary. Each national forest may purchase lands from willing sellers when funds are available from the Land and Water Conservation Fund, which are competed for by all national forests. The Forest Service works with the Arizona Game and Fish Department to purchase access routes into National Forest System lands to enhance public access to the national forest.

Concern Statement: The Forest Service should reconsider the Mount Graham International Observatory special use permit: to ensure that Native American sacred sites are adequately protected; because it is a poor place for astronomy; because the permit has been expired for nearly four years; because the only way to mitigate the effects of the observatory is to remove it; and to identify and analyze the biophysical and socio-cultural effects from observatory operations. (30.09)

Response: The permit to the University of Arizona for the Mount Graham International Observatory was issued on January 29, 2015. The effects of the Mount Graham International Observatory permit on traditional cultural properties and Native American sacred sites have been taken into account. The Mount Graham International Observatory was authorized by an act of Congress and cannot be removed by any action in this forest plan.

Concern Statement: The Forest Service should acknowledge the interest the Apache Tribe has in the lands in the Coronado National Forest. (30.10)

Response: We acknowledge the interest many tribes, including several Apache tribes, have in the management of the Coronado National Forest and provide opportunities for these tribes to comment on many projects occurring on National Forest System lands.

Concern Statement: The Forest Service should clarify the ownership and boundaries of Forest Service land managed by Audubon as the Appleton Whittell Research Ranch. (30.11)

Response: This is beyond the scope of the forest plan. Ownership of National Forest System lands used by the Appleton Whittell Research Ranch is vested in the United States. The boundary of Federal lands has been surveyed and monumented.

Concern Statement: The Forest Service should ensure that any affected district within the County will be compensated for any net loss of private lands with public lands of equal value. (30.12)

Response: Land exchanges or any kind of land acquisition are outside of the scope of the forest plan.

Designated Wilderness Areas (11)

Concern Statement: The Forest Service should note the potential protective value of wilderness management to archaeological sites where archaeological values are considered in Potential Wilderness Area assessments. (11)

Response: The potential wilderness capability evaluation considered several basic characteristics that make an area appropriate and valuable for wilderness designation. The characteristics evaluated in this process include naturalness, undeveloped, opportunities for solitude, special values, and manageability. In the Potential Wilderness Area Evaluation Report, historic and prehistoric archeological sites were noted in the "Special Features" section for individual areas that contain these values. The presence of these archaeological values contributed to the capability rating for each area. A similar discussion of the benefits and potential protective value of wilderness can be found in the "Cultural Resources" section of chapter 3 in the final environmental impact statement.

Concern Statement: The Forest Service should reconsider the rating criteria for Potential Wilderness Areas because they seem artificially contrived and are too broad. The Forest Service should redo or delete the Wilderness Need Evaluation because it is seriously flawed. (11)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guides the wilderness evaluations.

This process consists of three steps: identification of potential areas, evaluation of potential areas, and recommendation of potential areas. The Coronado National Forest lands were thoroughly analyzed to determine which areas met the criteria for identification of potential wilderness; these criteria can be found in Forest Service Handbook 1909.12, chapter 71 and in chapter 1 of the Potential Wilderness Area Evaluation Report.

The potential wilderness capability evaluation considered several basic characteristics that make an area appropriate and valuable for wilderness designation. The characteristics evaluated in this process include naturalness, undeveloped, opportunities for solitude, special values, and manageability.

Potential wilderness areas were also evaluated for availability to consider the potential impact of wilderness designation on both current and future land uses and activities. Land uses and activities considered include recreation and tourism; wildlife species, population, and

management needs; water availability and use; livestock operations; timber; minerals; cultural resources; authorized and potential uses; and management considerations including fire, insects, disease, and presence of lands of other ownership.

Lastly, potential wilderness areas were evaluated to determine the need for an area to be designated as wilderness. This analysis considered the degree to which the area contributes to the overall National Wilderness Preservation System. Need was analyzed on a regional basis and evaluated such factors as wilderness lands in the vicinity, visitor pressure, non-wilderness lands in the vicinity, primitive sanctuary for plants and wildlife, capacity of established wilderness areas, and wilderness areas with similar landforms and vegetation (Forest Service Handbook 1909.12, chapter 72.3).

The complete methodology and results of the wilderness evaluation process, including rationale for why certain areas were or were not recommended, are documented in the Potential Wilderness Area Evaluation Report and Wilderness Need Evaluation Report (Forest Service 2012b), available in the plan set of documents and on the Coronado National Forest's website at http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702.

Concern Statement: The Forest Service should reconsider designating the Mt. Fagan area as Wilderness because the descriptions of drug trafficking in the area are incorrect. (11)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guides the wilderness evaluations.

This process consists of three steps: identification of potential areas, evaluation of potential areas, and recommendation of potential areas. The Coronado National Forest lands were thoroughly analyzed to determine which areas met the criteria for identification of potential wilderness; these criteria can be found in Forest Service Handbook 1909.12, chapter 71 and also in chapter 1 of the Potential Wilderness Area Evaluation Report.

Potential wilderness areas, including Mount Fagan, were evaluated by local Forest Service employees with direct knowledge of these areas. Ongoing illegal activity has been documented and confirmed by Forest Service personnel and U.S. Border Patrol agents who regularly patrol the Mount Fagan area.

Concern Statement: The Forest Service should reconsider additional Wilderness Areas because mountain biking is not allowed in Wilderness Areas and because of the increased restrictions on motorized use and motorized tools. Wilderness designation is not always an appropriate, effective, efficient, economic, or wise use of land. (11)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guides the wilderness evaluations.

In the availability analysis of the potential wilderness area evaluation, the Forest Service analyzed the potential impacts of wilderness designation on both current and future land uses and activities.

Recreation (motorized and nonmotorized) was included in this evaluation of other land uses and activities. Potential wilderness areas received an availability rating that compared the value and need for wilderness to the value and need for other land uses, including mountain biking. These ratings can be found in appendix F of the Potential Wilderness Area Evaluation Report (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5440345.pdf).

The effects of managing to preserve wilderness characteristics are analyzed in the environmental impact statement, under alternative 1. The complete methodology and results of the wilderness evaluation process, including rationale for why certain areas were or were not recommended, are documented in the Potential Wilderness Area Evaluation Report and Wilderness Need Evaluation Report (Forest Service 2012b), available in the plan set of documents and on the Coronado National Forest's website at http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702.

Concern Statement: The Forest Service should exclude the Ku Chish and Mt. Graham areas from Wilderness designation to allow for mountain biking access and to avoid restricting the ability to conduct projects to improve forest health, watershed, and riparian areas. (11)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guided the wilderness evaluations.

In the availability analysis of the potential wilderness area evaluation, the Forest Service analyzed the potential impacts of wilderness designation on both current and future land uses and activities. Recreation (motorized and nonmotorized) and management activities (e.g. fire, fuels, wildlife, vegetation, timber) were included in this evaluation of other land uses and activities. Potential wilderness areas received an availability rating that compared the value and need for wilderness to the value and need for other land uses, including mountain biking. The ratings for Ku Chish and Mt. Graham can be found in appendix F of the Potential Wilderness Area Evaluation report (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5440345.pdf).

Project-specific analyses are conducted for all projects planned on the Coronado National Forest, including projects to improve forest health, watersheds, and riparian areas. Any projects proposed in wilderness will be analyzed for potential impacts to wilderness character and values. The effects of managing to preserve wilderness characteristics are analyzed in the environmental impact statement, under alternative 1.

The recommendation of new wilderness areas will influence the type of tool used to conduct site-specific projects in the Ku Chish and Mt. Graham areas. The "Wilderness and Other Special Areas – Environmental Consequences" section of chapter 3 in the environmental impact statement describes the effects of wilderness recommendation on activities that traditionally involve motorized or mechanized equipment.

The forest plan makes wilderness recommendations; only Congress can designate a wilderness area. The plan provides guidance to maintain the wilderness characteristics of these areas until Congress takes action.

Concern Statement: The Forest Service should explain the GIS criteria used in mapping Potential Wilderness Area boundaries and should remove "sights and sounds" arguments from Potential Wilderness Area evaluations. (11)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guides the wilderness evaluations.

Initial boundaries for potential wilderness areas were generated through a GIS exercise. The majority of boundary lines were drawn to follow natural features, such as ridgelines and high points, in the surrounding mountain ranges. In areas where no prominent features could be identified, boundaries follow the Coronado National Forest boundary. A portion of boundaries also follow existing roads and trails. The boundaries generated using GIS were then adjusted using local knowledge to remove conflicts and to make the boundaries more easily locatable on the ground.

The potential wilderness capability evaluation considered several basic characteristics that make an area appropriate and valuable for wilderness designation. The characteristics evaluated in this process include the following: natural, undeveloped, outstanding opportunities for solitude or primitive and unconfined recreation, special features and values, and manageability. The criteria for rating naturalness requires an evaluation of the “quality of night-sky as affected by light pollution.” The criteria for rating solitude requires an evaluation of the “opportunity to experience solitude and isolation from human activities while recreating in the area.” The impact of “sights and sounds” were considered as a component of these required criteria.

Concern Statement: The Forest Service should ensure that the following areas are preserved as Wilderness: the Whetstone Mountains; Cochise Head (Ku Chish); Cochise Stronghold (Dragoon Mountains); Tumacacori Highlands; Mount Graham ;Whitmire Canyon; Bunk Robinson; Mount Graham addition; Mount Wrightson addition; Chiricahua additions; Pajarita additions; Galiuro addition; Santa Teresa additions; Deer Creek; Skeleton Canyon; and Devil's Kitchen. (11.03, 11.07, 11.12, 11.16, 11.18, 11.21, 11.23, 11.33, 11.34, 11.35, 11.38, 11.40, 11.41, 11.46, 11.49)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guided the wilderness evaluation at the time it was conducted.

The areas listed in the concern statement above were analyzed in the Potential Wilderness Area Evaluation Report. Further analysis on the Whetstone, Ku Chish, Dragoon, Tumacacori, Mt. Graham, Whitmire Canyon, Bunk Robinson, Mount Graham Addition, Mount Wrightson Addition, Chiricahua Additions, Galiuro Addition, and Santa Teresa additions can be found in chapter 3 of the environmental impact statement, under the proposed action and alternative 1.

The potential wilderness area evaluation process consists of three steps: identification of potential areas, evaluation of potential areas, and recommendation of potential areas. The Coronado National Forest lands were thoroughly analyzed to determine which areas met the criteria for

identification of potential wilderness; these criteria can be found in Forest Service Handbook 1909.12, chapter 71 and also in chapter 1 of the "Potential Wilderness Area Evaluation Report."

The potential wilderness capability evaluation considered several basic characteristics that make an area appropriate and valuable for wilderness designation. The characteristics evaluated in this process are naturalness, undeveloped, opportunities for solitude, special values, and manageability.

Potential wilderness areas were also evaluated for availability to consider the potential impact of wilderness designation on both current and future land uses and activities. Land uses and activities considered include recreation and tourism; wildlife species, population, and management needs; water availability and use; livestock operations; timber; minerals; cultural resources; authorized and potential uses; and management considerations including fire, insects, disease, and presence of lands of other ownership.

Potential wilderness areas were evaluated to determine the need for an area to be designated as wilderness. This analysis considered the degree to which the area contributes to the overall National Wilderness Preservation System. Need was analyzed on a regional basis and evaluated such factors as wilderness lands in the vicinity, visitor pressure, nonwilderness lands in the vicinity, primitive sanctuary for plants and wildlife, capacity of established wilderness areas, and wilderness areas with similar landforms and vegetation (2007 Forest Service Handbook 1909.12 chapter 72.3,).

The complete methodology and results of the wilderness evaluation process, including rationales for why certain areas were or were not recommended, are documented in the Potential Wilderness Area Evaluation Report and Wilderness Need Evaluation Report (USDA Forest Service 2012b), available in the plan set of documents and on the Coronado National Forest's website at http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702.

Concern Statement: The Forest Service should clarify the management direction for existing designated wilderness areas. (11.01, 11.14, 11.25)

Response: Management direction for wilderness areas can be found in chapter 3 of the plan within the "Plan Components for All Designated Wilderness Areas" section. More specific guidance can be found in chapter 3 of the forest plan in the "Individual Wilderness Area Direction" section. In addition to direction found in the forest plan, the Forest Service has developed individual management plans to guide the management of each wilderness area on the Coronado National Forest. These documents are available on the Coronado National Forest's website at http://www.fs.usda.gov/main/coronado/home.

Concern Statement: The Forest Service should ensure that guidelines regarding construction, insect and disease control, vegetation management, structures and prohibitions of use are consistent with the Wilderness Act and the wilderness characteristics described within this legislation. (11.05, 11.08, 11.09, 11.10, 11.24, 11.30, 11.45)

Response: The forest plan provides guidance to manage wilderness consistent with law and policy. Wilderness is managed according to the Wilderness Act of 1964 and Forest Service Manual 2300 chapter 2320 - Wilderness Management. Section 2(c) of the Wilderness Act provides the definition of wilderness, and Section 4(c) of the act specifically addresses prohibited uses in designated wilderness. Forest plan guidelines, including those that address construction, insect and disease control, vegetation management, structures, and prohibitions of use, were

developed to be consistent with these applicable laws and policies. The desired conditions and associated plan components were not modified.

Concern Statement: The Forest Service should clarify how wilderness designation would affect public access to the wilderness boundary. (11.13, 11.42)

Response: Public access to wilderness areas is unchanged by wilderness designation. Wilderness is managed according to the Wilderness Act of 1964 and Forest Service Manual 2300 chapter 2320 - Wilderness Management. Section 4(c) of the Wilderness Act specifically prohibits the use of motorized and mechanized equipment within wilderness areas.

Concern Statement: The Forest Service should reconsider trails management in designated wilderness areas to address soil erosion, primitive conditions, and new trail construction. (11.06, 11.32, 11.43)

Response: Plan components that address trails management in designated wilderness areas can be found in chapter 3 of the plan in the "Plan Components for All Designated Wilderness Areas" section. Under the "Trails and Signage in Wilderness" and "Soil and Water in Wilderness" sections, guidelines state that new trail construction should only be considered if the objective is to enhance wilderness character. Site conditions for specific trails projects and maintenance will be analyzed at the site-specific, project level.

Concern Statement: The Forest Service should explain why cameras and remote sensing equipment should be avoided in wilderness. (11.04)

Response: The guidelines referencing "Research in Wilderness" can be found in the "Plan Components for All Designated Wilderness Areas" section in chapter 3 of the forest plan. Based on the long-term benefits produced from research efforts in wilderness areas, the guideline has been modified to state:

> "Installations, such as cameras and remote sensing equipment, should not detract from wilderness character and should be considered under the special use permitting process associated with research."

Concern Statement: The Forest Service should explain the effect of wilderness expansion on use of mechanized equipment to maintain pre-existing water rights. (11.17)

Response: Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guided the wilderness evaluations.

The expansion of existing wilderness or addition of new wilderness areas will influence the type of tool used to maintain pre-existing water rights. The "Wilderness and Other Special Areas – Environmental Consequences" section of chapter 3 in the environmental impact statement describes the effects of wilderness recommendation on activities that traditionally involve motorized or mechanized equipment.

Wilderness is managed according to the Wilderness Act of 1964 and Forest Service Manual 2300 chapter 2320 - Wilderness Management. Section 4(c) of the Wilderness Act specifically prohibits the use of mechanized equipment in wilderness "except as necessary to meet minimum

requirements for the administration of the area for the purpose of this Act." Specific proposed actions would be considered on a case-by-case basis with use of the "Minimum Requirements Decision Guide" (USDA and USDOI 2012). The guide is designed for use when making a determination that one of the "prohibited uses" (listed in section 4(c) of the Wilderness Act) is the minimum necessary requirement.

Concern Statement: The Forest Service should clarify whether managing for scenic integrity can override an individual wilderness management plan. (11.02)

Response: The proposed scenic integrity objective for wilderness is "very high", which is consistent with wilderness management. A scenic integrity objective of very high allows natural processes such as wildfire, and this is supported by direction in Forest Service Manual 2380 (Landscape Management), the Forest Service Handbook on Scenery Management, and the forest plan (see "Scenery," desired conditions).

Concern Statement: The Forest Service should use current census data when making land use designation decisions, in order to accurately reflect the current demand for wilderness areas. (11.11)

Response: Potential wilderness areas were evaluated to determine the need for an area to be designated as wilderness. This analysis considered the degree to which the area contributes to the overall National Wilderness Preservation System. Need was analyzed on a regional basis and evaluated such factors as wilderness lands in the vicinity, visitor pressure, nonwilderness lands in the vicinity, primitive sanctuary for plants and wildlife, capacity of established wilderness areas, and wilderness areas with similar landforms and vegetation (2007 Forest Service Handbook 1909.12 chapter 72.3).

The Forest Service developed the forest plan and supporting documents using the best available science and most current data on regional populations (including Census data) available at the time of development (see the analysis results and literature citations in the forest plan, the environmental impact statement, and supporting project record of documents).

Concern Statement: The Forest Service should acknowledge that the Kartchner Caverns are reliant on the Whetstone Potential Wilderness Area being managed properly. (11.12)

Response: The forest plan provides guidance for managing land and resources within the Coronado National Forest boundary. Management of the Kartchner Caverns State Park is not within the established authority of the Forest Service. The cumulative effects of recommended wilderness on all lands of other ownership within 100 miles of the Coronado National Forest can be found in the "Wilderness and Other Special Areas – Environmental Consequences" section of chapter 3 in the environmental impact statement. The forest plan recommends the Whetstone Potential Wilderness Area for wilderness designation and provides direction that it will be managed to preserve the wilderness character.

Concern Statement: The Forest Service should clarify the nature of the potential conflict between wilderness management and aquatic restoration activities in the Whetstone Proposed Wilderness Area. (11.15)

Response Project-specific analyses are conducted for all projects planned on the Coronado National Forest, including aquatic restoration activities. Any wetland restoration projects proposed in wilderness will be analyzed for potential impacts to wilderness character and values.

The effects of managing to preserve wilderness characteristics are analyzed in the environmental impact statement, under alternative 1. The forest plan does not include site-specific proposals for aquatic restoration in the Whetstone Potential Wilderness Area

In the availability analysis of potential wilderness area evaluation, the Forest Service analyzed the potential impacts of wilderness designation on both current and future land uses, activities, and other resource management needs. Potential wilderness areas received an availability rating that compared the value and need for wilderness to the value and need for other land uses, including aquatic restoration activities. These ratings can be found in appendix F of the Potential Wilderness Area Evaluation Report (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5440345.pdf).

Concern Statement: The Forest Service should consider the effect of potential wilderness areas on use of the Arizona Trail by mountain bikers and bikepackers because the designation could force cyclists to use dangerous highways and roads. (11.19)

Response: The effects of wilderness recommendation on mountain biking can be found in the "Recreation – Environmental Consequences" section of chapter 3 in the environmental impact statement. Consistent with the Wilderness Act of 1964, mechanized uses (including mountain biking) would not be permissible in areas designated as wilderness.

If these areas were to become wildernesses, the Coronado would consider a bypass route for mountain bikes on the Arizona Trail. During planning and design of the bypass route, we would consider public safety.

Consistent with agency policy, the Forest Service completed an assessment of areas that meet the criteria for potential wilderness through the wilderness evaluation process. Forest Service policy and planning direction is found in the Forest Service Manual 1920 and Forest Service Handbook 1909.12. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guided the wilderness evaluations.

In the availability analysis of the potential wilderness area evaluation, the Forest Service analyzed the potential impacts of wilderness designation on both current and future land uses and activities. Recreation (motorized and nonmotorized) was included in this evaluation of other land uses and activities. Potential wilderness areas received an availability rating that compared the value and need for wilderness to the value and need for other land uses, including mountain biking. These ratings can be found in appendix F of the Potential Wilderness Area Evaluation Report (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5440345.pdf).

Concern Statement: The Forest Service should correct the evaluation of the Dragoon Potential Wilderness Area to reflect that helicopter surveys regularly occur over wilderness areas. (11.20)

Response: The Potential Wilderness Area Evaluation Report acknowledges helicopter surveys in the Dragoon Potential Wilderness Area. In the availability analysis of the potential wilderness area evaluation, the Forest Service considered the potential impacts of wilderness designation on both current and future land uses and activities. Potential wilderness areas received an availability rating that compared the value and need for wilderness to the value and need for other land uses, including wildlife habitat restoration and/or monitoring. These ratings can be found in appendix F of the report (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5440345.pdf).

The Coronado National Forest used the wilderness evaluation process outlined in the 2007 Forest Service Handbook 1909.12, chapter 70; the areas assessed were identified as potential wilderness areas. Identification as a potential wilderness area does not confer any special status to an area nor require any additional management restrictions; it simply identifies which areas were assessed in the Potential Wilderness Area Evaluation Report.

The Coronado National Forest leadership team recommended four potential wilderness areas for wilderness designation; the Dragoon Potential Wilderness Area was not among them. The recommended wilderness areas are Ku Chish, Mount Graham, Chiricahua Addition North, and Whetstone Potential.

Concern Statement: The Forest Service should prioritize protecting the corridor that links the northern end of the Galiuro Mountains Wilderness with the Aravaipa Canyon Wilderness because it is one of the most sensitive unprotected linkages in southern Arizona. (11.22)

Response: As part of the forest plan revision process, we identified and evaluated potential wilderness areas according to the procedure outlined in agency guidance (2007 Forest Service Handbook 1909.12 chapter 70). The Galiuro Addition Potential Wilderness Area, which is in the northern end of the Galiuro Mountains, was evaluated as part of this process. The results of this evaluation are available in the Coronado National Forest Potential Wilderness Evaluation Report. Four of 33 potential wilderness areas, not including the Galiuro Addition, were recommended for wilderness designation by the Coronado National Forest leadership team: Ku Chish, Mount Graham, Chiricahua Addition North, and Whetstone Potential. These potential wilderness areas were selected by the leadership team to complement the desired conditions stated in the revised plan. When selecting the recommended areas, the leadership team considered the positive and negative impacts associated with wilderness designation, as well as issues raised in public comments and through public workshops.

Concern Statement: The Forest Service should clarify whether the Powers Cabin serves any administrative use of wilderness. (11.26)

Response: Powers Cabin is listed on the National Register of Historic Places and provides opportunities for wilderness education and historic preservation. The facilities at Powers Garden, also in the Galiuro Wilderness, serve as an administrative site for staging and packing in the wilderness. The use at Powers Cabin is described in the "Individual Wilderness Area Direction" section (under Galiuro Wilderness) of chapter 3 in the forest plan.

Concern Statement: The Forest Service should exclude existing mountain bike trails from the East Catalina Proposed Wilderness Area. (11.27)

Response: The Coronado National Forest leadership team recommended four potential wilderness areas for wilderness designation; the East Catalina Potential Wilderness Area was not among them. The recommended wilderness areas are Ku Chish, Mount Graham, Chiricahua Addition North, and Whetstone Potential. The forest plan will not restrict mountain bike use in the East Catalina Potential Wilderness Area.

Concern Statement: The Forest Service should explain why signs are needed in the Pajarita Wilderness Area. (11.28)

Response: Plan components that address signage in designated wilderness areas can be found in chapter 3 of the plan within the "Plan Components for All Designated Wilderness Areas" section.

Desired conditions and guidelines state that signs in wilderness areas should give directional information to provide for recreation opportunities while maintaining wilderness resource values.

Concern Statement: The Forest Service should manage wilderness study areas using the principles of multiple use and sustained yield. (11.29)

Response: Wilderness study areas in the plan are managed to maintain their wilderness character, preserve or enhance scenic resources, and for primitive recreation settings (see guidelines 1 through 8 in the "Recommended Wilderness Areas and Wilderness Study Areas" section in chapter 3 of the plan) until further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States. Congress takes action to formally designate these areas or to release them for multiple-use management (2007 Forest Service Handbook 1909.12, chapter 70, section 73.11). The project- or activity-level decision maker may exercise discretion in determining that proposed site-specific actions within a given wilderness study area are consistent with retaining the area's wilderness characteristics.

Concern Statement: The Forest Service should expand the Ku Chish Proposed Wilderness Area to be contiguous with Chiricahua National Monument to maximize habitat protection. (11.31)

Response: The forest plan recommends the Ku Chish Potential Wilderness Area for wilderness designation. The Ku Chish area is contiguous with the Chiricahua National Monument (see Chiricahua Ecosystem Management Area map in the Douglas Ranger District section of chapter 4 of the forest plan) in areas that meet agency policy for criteria for potential wilderness areas, as determined in the wilderness evaluation process. Forest Service Handbook 1909.12, chapter 70 (January 2007) is the policy direction that guided the wilderness evaluations.

This process consists of three steps: identification of potential areas, evaluation of potential areas, and recommendation of potential areas. The Coronado National Forest lands were thoroughly analyzed to determine which areas met the criteria for identification of potential wilderness. Inventory and boundary delineation for these areas were determined based on the criteria found in the 2007 Forest Service Handbook 1909.12, chapter 71 and also in chapter 1 of the Potential Wilderness Area Evaluation Report.

Concern Statement: The Forest Service should proceed with the wilderness designation for the lands within Fort Huachuca's radio testing area to support the local economy, maintain watersheds, and protect plants and birds. (11.36)

Response: The forest plan recommends the following areas for wilderness designation: Mount Graham Wilderness Study Area, and Ku Chish, Chiricahua Addition North, and Whetstone Potential Wilderness Areas. The boundaries of Fort Huachuca's radio testing area may include some of these lands; however, recommendations for wilderness areas on lands of other ownership are outside the scope of the forest plan decision.

Concern Statement: The Forest Service should note that proposed wilderness areas serve as potential jaguar corridors. (11.39)

Response: We recognize the importance of the lands we manage for recovery of the jaguar, including some areas analyzed as potential wilderness areas. The U.S. Fish and Wildlife Service designated critical habitat for the jaguar in March of 2014. In that designation, certain corridors were identified as important for jaguar movement between the United States and Mexico on lands managed by the Coronado National Forest. ARP-G-1 ensures the Coronado National Forest will

comply with the jaguar recovery plans. The Potential Wilderness Area Evaluation Report lists potential wilderness areas that contain potential jaguar corridors. This document is available in the plan set of documents and on the Coronado National Forest's web site at http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702.

Concern Statement: The Forest Service should retain the wilderness guideline regarding gathering dead and downed wood. (11.44)

Response: Chapter 3, guideline 2 in the vegetation in wilderness states: "Gathering of dead and downed fuelwood should be limited to recreational campfire use." This guideline has been retained.

Concern Statement: The Forest Service should acknowledge that the only legal designations of wilderness study areas are those designated under section 603 of the Federal Land Policy and Management Act. (11.47)

Response: Section 603 of the Federal Land Policy and Management Act applies to designation of wilderness study areas on Federal lands managed by the Bureau of Land Management. The Forest Service process for wilderness evaluation is outlined in Forest Service Handbook 1909.12, chapter 70 (January 2007); the areas assessed were identified as potential wilderness areas. Identification as a potential wilderness area does not confer any special status to an area nor require any additional management restrictions; it simply identifies which areas were assessed in the Potential Wilderness Area Evaluation Report.

Wilderness study areas are managed to maintain their wilderness character, preserve or enhance scenic resources, and for primitive recreation settings (see guidelines 1 through 8 in the "Recommended Wilderness Areas and Wilderness Study Areas" section in chapter 3 of the plan) until further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States. Congress takes action to formally designate these areas or to release them for multiple use management (2007 Forest Service Handbook 1909.12, chapter 70, section 73.11).

The Forest Service has authority to provide management area guidance for recommended wilderness and wilderness study areas through law and policy. The Arizona Wilderness Act of 1984 states,

> "...areas recommended for wilderness designation [in revised land management plans] shall be managed for the purpose of protecting their suitability for wilderness designation..." (Section 103 (b)(4)).

The Forest Service Manual gives a forest supervisor the responsibility to "Develop management direction for recommended wilderness . . ." (Forest Service Manual 1923.04c) and the regional forester the responsibility for "Approving management direction for recommended wilderness . . ." (Forest Service Manual 1923.04b).

The areas recommended for wilderness in the Coronado forest plan would not be managed as wilderness; they would be managed to protect their wilderness characteristics pending legislation and designation and to provide for existing uses where compatible.

The direction provided in the "Recommended Wilderness Areas and Wilderness Study Areas" section in chapter 3 of the plan would accomplish this requirement of the Arizona Wilderness Act of 1984 and the responsibilities found in Forest Service Manual 1923.04.

The plan makes wilderness recommendations; only Congress can designate a wilderness. The plan provides guidance to maintain the wilderness characteristics of these areas until Congress takes action.

Concern Statement: The Forest Service should develop a volunteer wilderness stewardship program. (11.48)

Response: Plan components that address volunteer opportunities in designated wilderness areas can be found in chapter 3 of the plan. In an effort to encourage volunteer stewardship across all designated wilderness areas on the Coronado National Forest, the following management approach was added to the "Plan Components for All Designated Wilderness Areas" section:

> "Coordinating with local user groups to develop a volunteer wilderness stewardship program, emphasizing nonconfrontational education and information sharing."

Concern Statement: The Forest Service should include group size limits in wilderness areas to limit impacts from large equestrian groups. (14.02)

Response: Plan components that address equestrian use and group size limits can be found in chapter 3 of the forest plan within the "Designated Wilderness Areas" section. Management approaches in this chapter include engaging equestrian groups in collaborative trail maintenance and construction projects and long-term partnerships. Management approaches for all wilderness areas include adjusting group size if visitor use threatens the wilderness character. A specific management approach for the Rincon Wilderness encourages visitors to limit off-trail group size (including cross-country travel and at dispersed camping areas) to no more than six people and six riding or pack stock animals per group.

Roadless Areas (50)

Concern Statement: The Forest Service should acknowledge that some roadless areas include roads, and should seek technical corrections to the inventoried roadless areas

Response: In 2001, the Roadless Area Conservation Rule (36 CFR Part 294) was signed, and the current inventoried roadless areas were established. Boundaries were drawn using the data available at the time, and unfortunately the Coronado's road data was not complete. While some roads are in the Coronado's inventoried roadless areas, most are short segments at the ends of existing roads, and some have already been obliterated or will be during implementation of travel management. The environmental impact statement has been updated to acknowledge that there are some roads in inventoried roadless areas. The Roadless Area Conservation Rule (36 CFR Part 294) does not allow corrections to inventoried roadless area boundaries during plan revision processes.

Withdrawal of Lands (65)

Concern Statement: The Forest Service should include an alternative that withdraws unique resource areas from mineral entry.

Response: The Forest Service does not have the authority to make mineral withdrawals. The agency does have the authority to recommend withdrawals of areas from mineral entry, but the actual withdrawal is subject to approval by the Bureau of Land Management and the Secretary of the Department of the Interior. In the past several years, the Bureau of Land Management has declined consideration of mineral withdraws requested by the Forest Service, and because of that,

the Forest Service is using other management tools to minimize mining and mineral exploration impacts. Furthermore, withdrawal only prevents the location of new mining claims, it does not prevent activity on existing valid claims.

Concern Statement: The Forest Service should withdraw Mount Graham from mineral entry to protect red squirrel habitat, and explain why impacts may be negligible because the average site is less than 2 acres. (65.04)

Response: In the section under "Mount Graham Red Squirrel and Critical Habitat" of the environmental impact statement, the sentence "The data on mineral exploitation indicates that these impacts may be negligible because the average site is less than 2 acres" was removed. This sentence was an editing error, left in from an older draft version of the document.

Mineral activity has the potential to impact the Mount Graham red squirrel by modifying available habitat and resources. Although facility development and mineral exploitation is restricted, new facilities and mineral exploration and extraction are not prohibited within the range of the squirrel. However, site-specific management plans would be developed for any new facilities, and these would be required to comply with the recovery plan guidelines to give adequate consideration for the welfare of the squirrel.

The Forest Service direction for withdrawals is outlined in Forest Service Manual 2760. Generally, a withdrawal is a management tool for withholding an area of National Forest System land from settlement, sale, location, or entry under some or all of the general land laws, including the mining and mineral leasing law, for the purposes of limiting activities under those laws in order to maintain other public values in the area, or reserving the area for a particular public purpose or program. These programs and purposes may include quality of scientific, scenic, historical, ecological, environmental, air, water resource, archaeological values, or other special purposes. Before recommending an administrative withdrawal for a certain area, the Forest Service must comply with the requirements under 43 CFR 2310.1-2 for consideration of alternative protection opportunities such as a right-of-way under section 507 of the regulation (43 U.S.C. 1767) or a cooperative agreement under sections 302(b) (43 U.S.C. 1732(b)) and 307(b) (43 U.S.C. 1737(b)) of the regulation, or other protection methods. These requirements are restated in the forest plan as guidelines under chapter 2 in the "Land Ownership Adjustments and Boundary Management" section.

Concern Statement: The Forest Service should explain how means other than withdrawal will result in the same desired condition that withdrawal would because the certainty of withdrawal is preferable to unexplained methods of protection. (65.07)

Response: The forest plan and environmental impact statement do not specifically claim "means other than withdrawal will result in the same desired condition that a withdrawal would." However, before recommending an administrative withdrawal for a certain area, the Forest Service must comply with the requirements under 43 CFR 2310.1-2 for consideration of alternative protection opportunities such as a right-of-way under section 507 of the regulation (43 U.S.C. 1767) or a cooperative agreement under sections 302(b) (43 U.S.C. 1732(b)) and 307(b) (43 U.S.C. 1737(b)) of the regulation, or other protection methods. These requirements are restated in the forest plan as guidelines under chapter 2 in the "Land Ownership Adjustments and Boundary Management" section.

Concern Statement: The Forest Service should support the use of withdrawals from mining to protect special places and resources such as cultural resources, unique resource areas, unique waters, watersheds for cities and towns, ecosystem values, sensitive springs and seeps, wilderness study areas, and research natural areas. (65.01, 65.02, 65.05, 65.06, 49.21)

Response: The Forest Service supports the use of mineral withdrawals for the purpose of resource protection and the protection of improvements to National Forest System lands such as developed recreation sites. It should be noted, however, that approval of a withdrawal is at the discretion of the U.S. Department of the Interior and the Forest Service may only make recommendations for mineral withdrawals. Furthermore, while withdrawal from mineral location (for location of a mining claim) prevents the location of new claims, it does not inactivate existing mining claims.

The Forest Service direction for withdrawals is outlined in Forest Service Manual 2760. Generally, a withdrawal is a management tool for withholding an area of National Forest System land from settlement, sale, location, or entry under some or all of the general land laws, including the mining and mineral leasing law, for the purposes of limiting activities under those laws in order to maintain other public values in the area, or reserving the area for a particular public purpose or program. Before recommending an administrative withdrawal for a certain area, the Forest Service must comply with the requirements under 43 CFR 2310.1-2 for consideration of alternative protection opportunities such as a right-of-way under section 507 of the regulation (43 U.S.C. 1767) or a cooperative agreement under sections 302(b) (43 U.S.C. 1732(b)) and 307(b) (43 U.S.C. 1737(b)) of the regulation, or other protection methods. These requirements are restated in the forest plan as guidelines under chapter 2 in the "Land Ownership Adjustments and Boundary Management" section.

Concern Statement: The Forest Service should provide a map of those areas proposed for withdrawal from mining. And describe the criteria used for recommending these areas for withdrawal. (65.03, 65.08)

Response: The proposed action and alternatives 1, 2, and 3 include recommended wilderness areas, which would be withdrawn if officially designated by legislation, but no other areas are being recommended for withdrawal. The no-action alternative, as part of the existing 1986 plan, does recommend withdrawal of some areas; however, the forest supervisor decided not to withdraw these areas after other methods of surface resource protection were identified. The "Minerals" and "Wilderness" sections of the environmental impact statement have been updated to better describe and compare the alternatives with respect to recommended wilderness areas and the withdrawals associated with them if officially designated.

Concern Statement: The Forest Service should reconsider withdrawals of lands available for locatable minerals and seek out additional input from the mining industry and to avoid impacts on firefighters and border patrol agents. (65.09)

Response: The Forest Service supports the use of mineral withdrawals for the purpose of resource protection and the protection of improvements to National Forest System lands such as developed recreation sites. It should be noted, however, that approval of a withdrawal is at the discretion of the U.S. Department of the Interior. The Forest Service may only make recommendations for mineral withdrawals. Furthermore, while withdrawal from mineral location (for location of a mining claim) prevents the location of new claims, it does not inactivate existing mining claims.

All National Forest System lands determined to meet wilderness capability requirements are considered potentially available for wilderness designation and potential withdrawal by legislation. However, the determination of availability is conditioned by the value of and need for the wilderness resource compared to the value of and need for other resources (see the 2007 version of FSH 1909.12, chapter 72.2). The availability of an area for wilderness designation is based on the tradeoffs involved in managing the area for wilderness character versus current and potential future uses, such as mineral resources and access. Refer to the Potential Wilderness Area Evaluation report for more detailed information and analysis of the potential wilderness areas considered for recommendation in the forest plan. The forest plan public involvement process, including scoping and comment periods and public meetings, allowed all individuals, including those in the mining industry, border patrol, and firefighters, an opportunity to comment on the forest plan and raise issues or concerns about the potential effects prior to the decision.

Transportation Management

Transportation System Management (58)

Concern Statement: The Forest Service should provide maps that clearly delineate the different types of roads in the forest to avoid conflicts between public visitors and private landowners. (58)

Response: The "Motorized Transportation System" section in chapter 2 of the forest plan states "The motorized transportation system available for public use is displayed on motor vehicle use maps." Please refer to the motor vehicle use maps for information on roads under Coronado jurisdiction. The motor vehicle use map is the sole legally required depiction of roads on which the Forest Service shows the general public which roads, trails and areas are available for motorized use. This map is available on paper for free and is also freely available online. Other maps which depict roads on the Coronado do not show sufficient detail to be the sole basis for making travel decisions.

Concern Statement: The Forest Service should clarify how road closure analysis is done, how decisions are made, who is part of the travel management process and explain that road closures do not expand nonmotorized recreation opportunities and are tied to site-specific conditions. (58.01, 58.12, 58.23)

Response: While the plan provides some guidance for managing roads, density and closures, the travel management process is generally a separate analysis and is outside the scope of the forest plan decision.

Concern Statement: The Forest Service should provide maps showing designated areas where off-road vehicles are permitted in order to comply with Executive Orders 11644 and 11989 and to avoid land use/ownership conflicts. (58.02, 58.10)

Response: The Forest Service does provide maps showing designated areas where off-road vehicles are permitted. Contact your closest ranger district office to receive a map.

Concern Statement: The Forest Service should provide an accurate accounting of the existing/proposed motorized transportation system and its density and analyze the impacts (increased visitor use, erosion) of that system on all forest resources (e.g., vegetation, soil, montane meadows, wetlands). (58.03, 58.04, 58.11, 58.17, 58.22, 58.24)

Response: The plan provides guidance for managing road density by setting desired conditions for the various land use zones. There are no new roads allowed in wilderness, and only those roads needed to restore access are allowed in the Wild Backcountry Land Use Zone. The travel management process, which is guided by the forest plan, provides an accurate analysis of the existing and proposed motorized transportation system and the impacts on all Coronado National Forest resources.

Concern Statement: The Forest Service should consider an alternative that features standards that prohibit new road and trail construction, require no net-increase of road density (limit to 1 mile per square mile) and include an objective encouraging reduction of road density in key watersheds and riparian areas because roads cause significant erosion, resource damage and sediment loading. (58.05, 58.15, 58.25)

Response: An alternative was considered that would not allow new roads or unauthorized routes to be added to the transportation system. The forest plan provides a framework to guide new road construction to reduce impacts to sensitive resources. Potential changes or additions to the forest's transportation system are not plan-level decisions and would be evaluated in separate analysis through implementation of the Travel Management Rule (73 FR 74689). As a result, this alternative was dropped from detailed consideration.

Concern Statement: The Forest Service should avoid decommissioning roads for the purpose of creating quiet recreation opportunities. There are sufficient quiet recreation opportunities already and too many roads to allow for adequate enforcement of quiet recreation. (58.14, 58.16)

Response: The plan provides guidance for quiet recreation in the form of desired conditions for wilderness and Wild Backcountry and Roaded Backcountry Land Use Zones. Decisions for decommissioning roads are made at the project level, through the travel management process.

Concern Statement: The Forest Service should acknowledge that improvements may be needed to SR266, SR366, and SR92 to maintain or widen the roads and prevent damage to the environment. (58.26, 58.28, 58.31)

Response: This comment is outside the scope of the forest plan. State highway road improvements are not within the jurisdiction of the Forest Service. They are managed by the Arizona Department of Transportation.

Concern Statement: The Forest Service should integrate the trail system with the Pima County Regional Trail System wherever possible and use local volunteers for trail maintenance. (58.08, 58.27)

Response: This comment is outside the scope of the plan. While trail systems located in Pima County are not within the jurisdiction of the Forest Service, coordination with outside agencies are always considered when developing new trails or maintaining existing trails.

Concern Statement: The Forest Service should ensure all existing forest roads remain open to allow for drug interdiction and include access for firefighting as a desired condition. (58.29, 58.30)

Response: The travel management process provides analysis of roads proposed to remain open, to be added, and decommissioned from the existing motorized transportation system. The U.S. Customs and Border Protection Agency provides input on roads necessary for drug interdiction

during the travel management process. They also have the lawful right to utilize any area on the Coronado National Forest to do anything as long as they have an exigent reason for doing so. Roads are always open for access to fire crews during emergencies. Travel management is generally a separate analysis and is outside the scope of the forest plan decision.

Travel management is both a Code of Federal Regulations and policy, which we adhere to. It provides a scientific basis for recommendation of which roads to retain on the system and at what maintenance level, class of vehicle, season, etc. The forest plan should not address points that have already been addressed nationally elsewhere. Further, the U.S. Customs and Border Protection Agency has the lawful right to use anywhere on forest to do anything so long as they have an exigent reason for doing this, including on closed roads, on no roads and in wilderness areas. The U.S. Customs and Border Protection Agency needs are fulfilled through travel management and through an independent memorandum of understanding and memorandum of agreement.

Concern Statement: The Forest Service should ensure that roads covered by RS 2477 will remain open. (58.06)

Response: This comment is outside the scope of the forest plan. Congress has not delegated to the Forest Service the adjudicative authority to conclusively determine whether there is a valid Revised Statute 2477. Only a court of competent jurisdiction can conclusively make such a determination. The Forest Service has a policy in place to evaluate the acceptance and scope of the rights-of-way claimed (asserted) under RS 2477 by a public road agency such as a City, County, or State (Forest Service Manual 2734.51 - Policies and Administration for Rights-of-Way Granted by Revised Statute 2477).

Concern Statement: The Forest Service should include a guideline protecting or maintaining authorized routes connecting to existing roads on State Trust Land. (58.07)

Response: This comment is outside the scope of the forest plan. Approximately 8 million acres of State Trust land are available for recreation, but access is not guaranteed. Where existing, unrestricted, legal motor vehicle access exists to the Coronado, these roads on National Forest System land which connect to that access route are a high priority to retain as system roads. Where such legal access does not and cannot reasonably be expected to occur, such roads on forest land are a low priority to retain as system roads. For those roads on National Forest System land where such legal access is highly desired and a feasible method exists to obtain such legal access, the roads are analyzed on a case-by-case basis. The Forest Service is currently unable to legally accept an easement from State Trust land in the State of Arizona and must rely on partner organizations to obtain and hold such easements. The travel management process provides analysis for existing and proposed routes and is a separate procedure.

Concern Statement: The Forest Service should consider permitting paving of roads. To address dust, potholes, road cuts, safety, and noise. (58.09)

Response: The surface treatment of roads is not a forest plan-level decision. The paving of roads will be analyzed during the travel management process since it would require a change in the maintenance level of the road.

Concern Statement: The Forest Service should prohibit additional paving of campgrounds or roads and should add a latrine to John Hands picnic area. (58.21)

Response: The surface treatment of roads is not a forest plan-level decision. The paving of roads and campgrounds will be analyzed during the travel management process since it would require a change in the maintenance level of the road. Addition of a latrine to John Hands picnic area would be addressed site specifically at the project level.

Concern Statement: The Forest Service should clarify that temporary roads are not permitted in inventoried roadless areas and that new roads are only permitted when needed to meet desired conditions. (58.13)

Response: During the development of the plan, the intent was not to repeat law, regulation, or policy. Those relevant laws, regulations, or policies are listed in appendix E of the forest plan, "Other Sources of Information." The 2001 Roadless Rule establishes prohibitions on road construction, road reconstruction, and timber harvesting on 58.5 million acres of inventoried roadless areas on National Forest System lands. The public health and safety exception at paragraph (b)(1) in the final rule applies only when needed to protect public health and safety in cases of an imminent threat of a catastrophic event that might result in the loss of life or property. It does not constitute permission to engage in routine forest health activities, such as temporary road construction for thinning to reduce mortality due to insect and disease infestation. Paragraph (b)(3) permits the construction and reconstruction of a road pursuant to rights granted in statute or treaty, or pursuant to reserved or outstanding rights. These include, but are not limited to, rights of access provided in Alaska National Interest Lands Conservation Act, highway rights-of-way granted under Revised Statute 2477, and rights granted under the General Mining Law of 1872, as amended. Rights of reasonable access for mineral exploration and development of valid claims would be governed by the General Mining Law under any of the alternatives considered in the environmental impact statement. These rights of access may or may not include new road construction as discussed elsewhere in this preamble. Therefore, rights of access to locatable mineral exploration and development of valid claims would not be affected by the final rule or any of the alternatives analyzed in the environmental impact statement.

Concern Statement: The Forest Service should choose a better parameter for evaluating alternatives than potential jaguar mortality from vehicle collisions because there is no evidence that jaguars are at risk. (58.18)

Response: Impacts of roads on large carnivores include direct mortality from vehicle collisions. In our view, "no evidence of jaguar mortality from vehicle collisions" does not equate to "no risk". Therefore, as stated in table 15 of the environmental impact statement, the parameter is a valid one. Impacts of roads on large carnivores include direct mortality from vehicle collisions, avenues for illegal shooting, direct habitat loss, and harassment. Areas where the ocelot and jaguar have occurred on the Coronado have low road densities and include portions of areas currently being considered for wilderness status.

Concern Statement: The Forest Service should clarify the process for opening trails within the Mount Graham Red Squirrel Refugium and the Mount Graham International Observatory because those areas are closed to the public without a permit from the University of Arizona. (58.19)

Response: The Mount Graham Refugium and Mount Graham International Observatory are administered through a special use permit to the University of Arizona. The policy for trail use is described in this permit, not in the forest plan.

Concern Statement: The Forest Service should consider including a link to the most recent version of the Arizona Department of Transportation Five-Year Program because it is updated annually. (58.20)

Response: The Arizona Department of Transportation Five-Year Program is considered and referenced in the environmental impact statement, appendix B. We appreciate the suggestion for including a link to the most recent version and will include it so reviewers of the environmental impact statement can see the most recent version.

Concern Statement: The Forest Service should analyze the effects of removing large tracts of land from access to vehicular traffic. (58.32)

Response: The draft environmental impact statement analyzed motorized activities on the Coronado on pp. 386-390. Under all alternatives, future changes in the miles of National Forest System roads and motorized trails would be evaluated site specifically as needs are identified and in accordance with the transportation analysis process and Travel Management Rule requirements.

Concern Statement: The Forest Service should clarify what is meant by "roads open to public unless restricted for administrative use." (58.33)

Response: In the "Public Access" section of the forest plan, the desired condition states:

> "Legal status deficiencies of the existing system of forest roads and trails have been resolved; these roads and trails are available for use by public lands users, unless restricted for administrative purposes."

Roads restricted to administrative use include use by special use permittees, U.S. Customs and Border Protection personnel, and Forest Service personnel.

Socio-economic Concerns

Border Patrol Activity (4)

Concern Statement: The Forest Service should engage with Border Patrol agents to manage on the ground impacts from agent activities. (4.01)

Response: In the "Revision Topic 2: Visitor Experiences" section of the environmental impact statement, it states:

> Border Patrol has a public lands liaison who works directly with the forest at both the district and forest level. This relationship affords both agencies to respond to immediate impacts to the environment, plan ahead and attempt to minimize Border Patrol impacts when operations are undertaken on the forest. For most activities the Border Patrol have land management agency liaisons and consultants that work with the U.S. Fish and Wildlife Service on threatened and endangered species.

The Coronado National Forest has also created a Forest Service border liaison position to work with the Border Patrol on resource issues.

Concern Statement: The Forest Service should prohibit border patrol activities within the Mount Graham Biological Research Area to avoid effects to the ecologically sensitive area. (4.02, 23.03)

Response: The Department of Homeland Security enabling legislation allows for interdiction activities on all National Forest System lands; therefore, it is outside the scope of the forest plan to limit the activities of the Border Patrol. In recommended wilderness areas, the Border Patrol has the authority to supersede management restrictions on motorized vehicle use during pursuit of a crime in progress. However, Border Patrol frequently works with the Forest Service to minimize resource impacts for planned activities.

Concern Statement: The Forest Service should limit activities in the border region over which they have control to take into account the effects of activities that are not within their control. (4.03)

Response: The Forest Service takes into account known activities not under their control that occur on National Forest System lands when planning for activities in the border region that are under Forest Service control. In the "Revision Topic 2: Visitor Experiences" section of the environmental impact statement it states:

> Border Patrol has a public lands liaison who works directly with the forest at both the district and forest level. This relationship affords both agencies to respond to immediate impacts to the environment, plan ahead and attempt to minimize Border Patrol impacts when operations are undertaken on the forest. For most activities the Border Patrol have land management agency liaisons and consultants that work with the U.S. Fish and Wildlife Service on threatened and endangered species.

Concern Statement: The Forest Service should add the impacts of border migration and interdiction to the cumulative effects analysis. (4.04)

Response: Cumulative effects analysis of border migration and interdiction activities are not within a forest plan-level decision. Those activities may be taken into account during individual project analysis.

Concern Statement: The Forest Service should insist that Border Patrol actions be consistent with the uses of the forest and that uses should go through a National Environmental Policy Act analysis. (4.05)

Response: The Border Patrol constantly works with the Forest Service to bring their interdiction activities more in line with Forest Service resource goals. In the "Public Safety and Illegal Activities – Environmental Consequences" section of chapter 3, under alternative 1, environmental consequences section, because of wilderness restrictions, law enforcement officers would have to access wilderness on foot or horseback. Helicopter patrols may be an option if approved by the regional forester after a minimum requirements decision guide analysis is completed for such actions in specific restricted areas. Also, all facilities constructed by the Department of Homeland Security go through a National Environmental Policy Act analysis on a project-by-project basis.

Cultural, History, Anthropology Management (9)

Concern Statement: The Forest Service should expand the list of items that are part of monitoring to include cultural resources. (9)

Response: We added cultural resources to the list of items that are part of monitoring. See chapter 6 of the forest plan.

Concern Statement: The Forest Service should improve the discussion of cultural resources, tribal relations, and plant and animal communities to American Indian communities, as well as the importance and intricate links of cultural, plant, animal, and water (springs) resources to respective ecological and biological communities. (9.01, 9.07, 9.11)

Response: The importance of plants and animals to tribes and objectives for involving tribes in consultation are emphasized in the "Tribal Relations" section of chapter 2, "Forestwide Management." One of the objectives in that section is:

> "Providing opportunities for tribal members to engage in traditional activities, such as the collection of medicinal plants, wild plant foods, basketry materials, and fuelwood for personal use."

Concern Statement: The Forest Service should reconsider the definition of priority heritage assets to emphasize evaluating the archaeological or historical significance of a resource, and include state historic preservation registrars in the discussion of historic places. (9.02, 9.04)

Response: The definition of a priority heritage asset is standardized throughout the Forest Service as cultural resource sites and buildings listed on the National Register of Historic Places and other sites where investment in interpretation or preservation activities has been made. One of the desired conditions in the "Cultural Resources" section of chapter 2 is the continued protection and preservation of these priority assets, and one of the objectives is conducting preservation and stabilization work at these sites. State Registers of Historic Places are reviewed, but on Federal lands, the National Register of Historic Places is of greater importance. Desired conditions and objectives in the "Cultural Resources" section of chapter 2 include listing historically significant properties on the National Register of Historic Places.

Concern Statement: The Forest Service should proceed with the Native American Graves Protection and Repatriation Act repatriation of pre-1990 collections.

Response: In the draft forest plan, there was an objective to complete Native American Graves Protection and Repatriation Act repatriations of all items collected prior to 1990, within 5 years of plan approval. Since the draft plan was released, the Coronado National Forest has been successful in fulfilling its Native American Graves Protection and Repatriation Act obligations, and so we have deleted this forest plan objective.

Concern Statement: The Forest Service should acknowledge that there are many Native American tribes in the area and ensure Native Americans communities have access to Forest lands for traditional use, religious purposes, and resource procurement. (9.05, 9.06, 9.10)

Response: We acknowledge how important it is for tribes to have access to National Forest System lands for traditional use, religious purposes, and resource procurement. This is emphasized in the "Tribal Relations" section of chapter 2, under "Forestwide Management." We recognize tribes have cultural ties and knowledge about the lands currently managed by the Coronado National Forest. Many tribal members regularly visit these lands to gather traditional resources and to visit traditional cultural properties and sacred sites.

Concern Statement: The Forest Service should proceed with the goals for interpretive events, volunteer opportunities, and the "Rooms with a View" program. (9.08)

Response: In the "Cultural Resources" section of chapter 2, the continued development of interpretive programs and the "Rooms with a View" program are identified as management approaches to be taken to meet objectives.

Concern Statement: The Forest Service should provide for increased and improved identification, assessment and protection of sites, districts, landscapes and traditional cultural places (e.g., the Santa Rita Mountains) having cultural and religious significance to Native Americans. (9.09, 9.12, 9.13)

Response: An objective for the identification of historic properties, including districts and places of importance to tribes is included in the "Cultural Resources" section in chapter 2 of the plan. One of the objectives in the "Tribal Relations" section is:

> "Documenting the traditional and cultural importance of the Santa Rita Mountains, recognized by O'odham peoples as a place of traditional and cultural importance."

Since the draft plan was written, the Santa Rita Mountains have been determined eligible for the National Register of Historic Places as the Ce:wi Duag Traditional Cultural Property important to the O'odham and other tribes. The forest plan updated the Santa Rita Ecosystem Management Area description to include recognition of this place of traditional importance to tribes ("Santa Rita Ecosystem Management Area – General Description" section).

Economic and Social Actions, Analyses (16)

Concern Statement: The Forest Service should acknowledge the economic role that outdoor education and recreation plays in the local economy, as well as the importance of ecotourism to the region while ensuring that economic activities benefit the entire community. (16.01, 16.07, 16.05)

Response: The economic role that outdoor education and recreation play, ecotourism, and its community benefits are found in chapter 2 of the plan within the "Recreation; Desired Conditions" section. Recreation on the Coronado National Forest enhances the quality of life for residents and provides tourist destinations, which contribute to local economies. These benefits are described in the Social and Economic Sustainability Report and in chapter 3 of the environmental impact statement.

Concern Statement: The Forest Service should analyze the socioeconomic effects of the Municipal Supply Watershed designation for the town of Patagonia. (16.02)

Response: The recognition of the area serving the Town of Patagonia water system as a municipal supply watershed is not a forest plan decision. It is based on the following definition of a public water supply:

> "The term ''public water system'' means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals." (42 U.S.C. Part A (4)(a))

The Forest Service regulation for management of municipal watersheds (36 CFR 251.9 (a)) states:

> "The Forest Service shall manage National Forest watersheds that supply municipal water under multiple use prescriptions in forest plans (36 CFR part 219). When a municipality desires protective actions or restrictions of use not specified in the forest plan, within agreements, and/or special use authorizations, the municipality must apply to the Forest Service for consideration of these needs."

The Town of Patagonia water system treats and distributes water to approximately 3,000 residents and meets the legal requirements for a public water system. Recognition of the Town of Patagonia municipal supply watershed in the forest plan is in alignment with the legal requirements listed above. The watersheds will continue to be managed for multiple use and no restrictions are being incorporated. The Town of Patagonia and the Forest Service entered into an agreement to allow the Town to post the watershed as a municipal supply watershed, conduct education programs in the watershed, and sample water quality according to Arizona Department of Environmental Quality protocols. Since no restrictions are being placed on the watershed, no effects are predicted.

Concern Statement: The Forest Service should revise the "Climate-Related Socioeconomic Demand" section to include more useful statistics to assess future demand. (16.03)

Response: We developed the plan using the best available science for "Climate-related Socioeconomic Demand" (see the analysis results and literature citations in the plan, the environmental impact statement, and supporting project record of documents). Forest Service policy also requires interdisciplinary specialists to use the best available science for their analyses at the project level to inform the deciding official.

Concern Statement: The Forest Service should disclose the source of funding for the plan, how funding will be secured, and include a discussion of the funding needed to support the alternatives. (16.04, 16.08)

Response: A discussion of funding for the proposed action as well as the alternatives is found in chapter 2 of the environmental impact statement in the "Comparison of Alternatives" section. The differences between alternatives are unlikely to affect forest expenditures and revenue. Therefore, the present value of costs is consistent across alternatives.

Concern Statement: The Forest Service should acknowledge that there is insufficient funding to maintain forest roads. (16.09)

Response: A discussion of the funding needed to maintain forest roads is found in chapter 2 of the plan in the "Motorized Transportation System" section, "Management Approaches" section. We are seeking road maintenance agreements with local government agencies and private organizations to supplement forest-funded maintenance.

Concern Statement: The Forest Service should revise the inadequate and incomplete economic analysis to include the economic contribution of hunting, an analysis of the cost to administer grazing, an analysis of the effects of withdrawals of lands from multiple use, and an economic sustainability analysis. (16.06, 16.10)

Response: We developed the plan using the best available science for the economic analysis (see the analysis results and literature citations in the plan, the environmental impact statement, and

supporting project record of documents). Forest Service policy also requires interdisciplinary specialists to use the best available science for their analyses at the project level, to inform the deciding official. Additionally, the cost and revenues by program area are reported in the "Economic" section of the final environmental impact statement. Detailed analysis of the grazing program was not provided because there was no difference between alternatives with respect to grazing.

Concern Statement: The Forest Service should recognize that Cochise County's recreation and tourism will be affected by the plan. (16.11)

Response: We agree and have added a topic regarding communities, collaboration, and partnerships that addresses the affected recreation and tourism of the six counties into which the Coronado National Forest extends, including Cochise County.

Enforcement (18)

Concern Statement: The Forest Service should provide more rangers in the national forest, to identify and repair erosion problems, increase enforcement to damage to the forest, and include an objective that includes quantitative goals for improved law enforcement. (18.01, 18.03)

Response: This is outside the scope of the forest plan. The Forest Service law enforcement staffing level is reflective of the budget allocated to the Forest Service from Congress. With the current staffing level, the law enforcement program identifies areas of increased criminal activity, negative impacts to the resources, and areas of decreased public safety. Each year objectives are set to decrease criminal activity, lessen impacts to the resources, and to increase public safety. At the end of each fiscal year, goals accomplished are evaluated by reviewing crime statistics and doing an inventory of impact areas.

Illegal Uses (23) and International Border (26)

Concern Statement: The Forest Service should include humanitarian activities in the formal management approaches to facilitate the preservation of lives along the border. (23.01, 23.02)

Response: Humanitarian activities are project-level decisions and are not within a forest plan-level decision.

Concern Statement: The Forest Service should provide support for statements regarding illegal users and fires. (23.04)

Response: It is difficult to determine and document fires that are set by illegal immigrants. All fires are documented and entered into the Coronado's fire database, and this database was used to inform the forest plan and analysis in the environmental impact statement.

Concern Statement: The Forest Service should acknowledge that border patrol agents need to have access throughout the region to curtail the illegal transport of drugs, guns, and illegal aliens. (23.05)

Response: The forest plan sets desired conditions for the border region that include an environment where the risks are predominantly natural, visitors do not feel threatened, and where illegal activities do not cause resource damage. We acknowledge the need for access on National Forest System lands by Border Patrol agents in the border region for interdiction purposes, and we work with them to ensure access is available in a manner that minimizes impacts to Coronado

National Forest resources. Allowing access to Border Patrol agents is an important safety matter but is outside the scope of the forest plan.

Concern Statement: The Forest Service should analyze the effects of construction of roads and fences associated with the international border. (26.01)

Response: The analysis of impacts from facility construction is done at a project level and is not within a forest plan-level decision. Any new infrastructure proposed by the Department of Homeland Security, Customs and Border Patrol, is analyzed by the Department and the Forest Service in their respective National Environmental Policy Act analysis processes.

Impacts of Illegal Uses (24)

Concern Statement: The Forest Service should analyze the effects of fires set by illegal aliens. (24.01)

Response: The effects of fires set by illegal immigrants are not part of forest plan level analysis. It is difficult to determine and document fires that are set by illegal immigrants. All fires are documented and entered into the Coronado's fire database, and this database was used to inform the forest plan and analysis in the environmental impact statement.

Concern Statement: The Forest Service should acknowledge that issues related to undocumented aliens crossing the border are not part of the agency's mandate. (24.02)

Response: Acknowledgement of issues related to illegal immigration is not a forest plan-level decision. The Forest Service does not have an agency mandate to deal directly in the interdiction of illegal immigrants; however, Forest Service law enforcement officers must enforce Federal law on National Forest System lands regardless of who may have broken the laws.

Concern Statement: The Forest Service should address permittee management of issues relating to illegal activity along the border. (24.03)

Response: Addressing permittee issues related to illegal immigration is not a forest plan-level decision. Such incidents are managed on a case-by-case basis.

Concern Statement: The Forest Service should include efforts to remove trash left by illegal aliens. (24.04)

Response: The forest plan sets desired conditions for the border region that include an environment where trash is not commonly found. This guidance sets the stage for future projects to remove trash left by illegal immigrants when funding, equipment, and personnel become available.

Public Health and Safety (43)

Concern Statement: The Forest Service should assess the impacts on public safety including road safety. (43.01)

Response: Public safety is a major concern of the Forest Service but is outside the scope of the forest plan. Several Forest Service directives have been published to address the most common and general public safety issues, especially those involving safety along public and National Forest System roads. Assessments are conducted by Forest Service engineering and roadway

construction teams to determine possible hazards to the visiting public. Repair or abatement actions are initiated when a hazard may endanger the health and safety of those visiting the Coronado National Forest.

Administrative Comments

Confirm Receipt of Letter (7)

Concern Statement: The Forest Service should confirm receipt of letter.

Response: The Forest Service does not confirm the receipt of a letter; however, letters submitted for the Coronado National Forest Land and Resource Management Plan can be found at the following web site: https://cara.ecosystem-management.org/Public/ReadingRoom?project=31147

No Further Response Required (35)

Concern Statement: The Forest Service does not need to respond to these comments. Because they only acknowledge the work of the Forest Service because they only refer to comments submitted by others.

Response: Thank you for your comment.

Remove from Mailing List (47)

Concern Statement: The Forest Service should remove the respondent from the mailing list. (47.01)

Response: We have removed individuals from the mailing list at the respondent's request.

Requests for Information (48)

Concern Statement: The Forest Service should provide a compact disc of the draft forest land and resource management plan and draft environmental impact statement, a printed copy of the final land and resource management plan and environmental impact statement, and copies of the final decision. (48.01)

Response: The draft environmental impact statement and draft forest land and resource management plan are available via the following web site: http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702. The Forest sent out compact discs that contained these documents and supplemental specialist reports to those who requested them. Printed copies of the forest plan, final environmental impact statement, and record of decision will likewise be available by request.

Appendix B. Coordination with Other Public Planning Efforts

Summary

Per the provision of the 1982 planning regulations, the responsible official shall review the planning and land use policies of other Federal agencies, state and local governments, and Indian tribes. This document, along with other planning efforts, contributes to that requirement.

Ecosystem restoration and resilience will be a main focus in the revised forest plan. The Chief of the Forest Service Tom Tidwell has called for an "all-lands approach" to accomplish ecosystem restoration. This will involve land owners and stakeholders working together across boundaries to decide on common goals for the landscapes they share.

In order to facilitate this "all-lands approach," it is important to understand the goals and anticipated activities of our adjacent land owners. The following sections provide a summary of those goals and activities.

Counties

The Coronado National Forest lies in five counties in Arizona: Cochise, Graham, Pima, Pinal, and Santa Cruz; and one county in New Mexico: Hidalgo.

County comprehensive plans can be used as a source of information on the history of land use within the region, the patterns of development, desired conditions, and current county land use policies. County governments hold no legal authority over independent jurisdictions such as Federal and state lands, incorporated cities and towns, or Native American tribal reservations.

County land use in the planning area ranges from traditional uses such as farming and ranching in rural areas to denser concentrations of residential, industrial, and commercial uses in and around suburban (e.g., Douglas, Safford, Nogales) and urban areas (e.g., Tucson metropolitan area and Sierra Vista). One of the common themes is how, and whether, private owners and public land managers can manage the competing priorities of resource conservation and economic development—in particular how to cope with the growing demands for housing and recreation while preserving a shrinking natural resource base that contributes to Arizona's highly valued "rural character."

Comprehensive plans are summarized below for the five Arizona counties and one New Mexico county in which the Coronado National Forest occurs.

Graham County Comprehensive Plan

Like many areas throughout the Mountain West, patterns of existing land use in Graham County are rooted in the history of settlement by miners, ranchers, and farmers. The Graham County Comprehensive Plan marks 1872 as a milestone in development of the county after the establishment that year of a copper mine in the town of Clifton (then in Graham County). At

about the same time, farming communities were being established along the Gila River, which traverses the county from east to west (Graham County 1996).

Today, Graham County remains an area of rich natural resources with a rural culture and an economy supported by continued copper mining, cotton farming, and cattle ranching. The Gila River is a vital source of water for approximately 52,000 acres of cultivable land in the county, much of which is dedicated to the production of cotton, a primary component of the county's agricultural economy. Mining has also continued to play a major role in the development of Graham County. In addition to a number of small mines operating throughout the county, the Phelps-Dodge Corporation manages a large open pit mine north of Safford. Graham County is also home to the Large Binocular Telescope, the world's most powerful optical telescope which was completed in 2004. For these reasons, the Graham County Comprehensive Plan emphasizes the importance of protecting both the natural resources and scenic beauty that are "essential to the economic stability and unique character and lifestyles" of the area (Graham County 1996).

Graham County covers 4,650 square miles, making it the 12th largest of Arizona's 15 counties. In addition to 22 square miles of water, the comprehensive plan identifies three basic geologic areas within Graham County: (1) the Gila River basin; (2) the mountain areas comprised by the Gila, Pinaleño, Santa Teresa, and Galiuro ranges; and (3) the high desert plains north of the Gila and Pinaleño Mountains. Graham County is also the home of Aravaipa Canyon and the Gila Box, the only two federally designated riparian areas in the United States as of 1996 (Graham County 1996).

The Graham County Comprehensive Plan identifies 15 land use zones in the county permitting uses from dense residential developments, such as mobile home and travel trailer parks, to manufacturing and industrial uses. The plan further classifies these zones into five broad land use categories: (1) urban residential, (2) rural residential, (3) agricultural and ranching, (4) commercial, and (5) manufacturing.

Residential Land Use

The urban residential classification includes single-family residential, manufactured, and mobile homes and multiple-family residential uses. Minimum lot sizes range from 5,000 square feet for manufactured and mobile homes to 10,000 square feet for multi-family residential parcels. Each parcel must be served by an approved domestic water supply system, and parcels less than 10,000 square feet must also be served by an approved sewage collection and treatment system.

The rural residential classification applies to agricultural-residential, single-family residential, residential recreation, and special development zones. Minimum lot sizes range from 20,000 square feet for single-family residential uses to 3 acres for special development zones. Both light farming and home occupations are permitted in the zones, and approved domestic water supply systems are required for parcels less than 1 acre. Parcels in special development zones may serve mixed-use purposes, including residential, commercial, and manufacturing where a minimum of 3 acres are part of singular or joint-planned developments (Graham County 1996).

Commercial and Industrial Land Use

Commercial land uses in Graham County are classified as commercial recreation, neighborhood commercial, or general commercial uses. Minimum lot sizes range from 10,000 square feet for

neighborhood and general commercial uses to 1 acre for commercial recreation uses. Rather than industrial land use, the Graham County Comprehensive Plan designates its fifth and final category as manufacturing land use. This category accounts for commercial manufacturing, general manufacturing, and unlimited manufacturing land use zones. Minimum parcel sizes range from 1 acre for commercial manufacturing to 5 acres for general and unlimited manufacturing zones. The plan stipulates that fencing or screening may be required for lots adjacent to nonindustrial uses and that one dwelling unit is allowed per parcel (Graham County 1996).

There are three incorporated communities in the county: Safford, Thatcher, and Pima.

Cochise County Comprehensive Plan

The Cochise County Comprehensive Plan was adopted in 1984 and amended and readopted in 2015. Like other comprehensive plans throughout the state, it alludes to a rural culture and lifestyle largely influenced by traditional land uses such as livestock production, farming, and mining. Like other plans in this region, it also states the purpose of assisting residents and planners in achieving a balance between urban, rural, and public land uses, which supports the protection of both the local economy and the county's natural resource base. The plan makes specific mention of Fort Huachuca as a key player in the county's history as well as a primary contributor to its current economic stability. Rather than a detailed guide to residential, commercial, and industrial zoning, the Cochise County Comprehensive Plan sets forth growth categories and plan designations, planning guidance for communities, and overall goals policies designed to support desired land use patterns in the county. The plan identifies goals and supporting policies for 11 elements: land use; affordable housing, neighborhood rehabilitation, and enterprise development; agriculture and ranching; economic development; renewable energy; federal government coordination; intergovernmental coordination; adequate facilities and service; rural character; transportation; and water conservation (Cochise County 2015).

The plan divides the entire area of Cochise County, with the exception of incorporated cities, into four growth-area categories based on the area's expected capacity for change. Urban growth areas (category A) are those that are experiencing an unusually high rate of growth and have the infrastructure and service capacity to support it. Community growth areas (category B) includes transition areas adjacent to urban growth areas and unincorporated areas that are experiencing growth. Rural community areas (category C) are smaller rural community areas which demonstrate a slow rate of change and community attitudes that favor maintaining the existing neighborhood or rural atmosphere. Finally, rural areas (category D) include low growth, sparsely populated rural lands in the county that serve primarily as rural residential development and agricultural production areas rather than identifiable communities (Cochise County 2015).

Within each of the growth categories described above, the Cochise County Comprehensive Plan establishes seven distinct land use designations. The designations are intended to identify the existing character of smaller areas within specific growth categories. The "neighborhood conservation" designation identifies established areas that are primarily residential and will be afforded zoning protection to maintain the desired character and intensity of land use. An "enterprise" designation identifies areas with an established pattern of commercial and/or industrial land use. A "developing" designation indicates an area experiencing non-rural growth, that is expected to continue. It allows flexibility in determining both the character and intensity of future development. The "neighborhood rehabilitation" designation is applied to residential neighborhoods experiencing deterioration that show potential for revitalization. The "enterprise

redevelopment" designation is assigned to existing developed areas undergoing change that may be designated for improvement as a commercial or industrial area. The "rural residential" designation includes areas in category D (rural) areas with a definite pattern of residential development on larger lots, two acres or larger in size. Finally, the "rural" designation include those remaining lands in category D (rural) areas that are not designated "rural residential" with sparse populations, larger lots, agricultural production or grazing, and similar characteristics (Cochise County 2015).

Communities (cities or towns) in Cochise County that are adjacent, or close to, the Coronado National Forest are Willcox, Douglas, Portal, Benson, Sierra Vista, Tombstone, Bisbee, St. David, Elgin, and Sonoita.

Pima County Comprehensive Plan Update

The Pima County Comprehensive Plan Update was specifically intended to reflect the land use policies, principles, and concepts identified in the Sonoran Desert Conservation Plan. Adopted in September 2001, the plan's purpose is to contribute to the quality of the built environment as well as the effectiveness of the conserved environment and improve the status of the region's fiscal, natural, and cultural resources (Pima County 2001).

Over the last 100 years, Tucson's urban area has expanded dramatically: from 2 square miles in 1900, to 10 square miles in 1950, to 100 square miles in 1980, to nearly 200 square miles as of 2001. Although population levels have experienced a similar increase, population density has not. In fact, the Pima County Comprehensive Plan suggests population density has actually declined from approximately 5,200 individuals per square mile in 1953 to only 2,400 per square mile today. The combined effect of population growth at low densities equates to a land consumption rate of nearly 7 square miles a year. At that rate of population growth, the land base of Tucson will nearly double over the next 20 years. Acknowledging that the conservation objectives of the Sonoran Desert Conservation Plan are not likely to be achieved in metropolitan areas, the comprehensive plan focuses its policies on over a million acres of land in unincorporated Pima County. Specifically, the comprehensive plan is aimed at responding to a current land market that encourages unregulated, leapfrog development, a leading cause of natural resource depletion and urban sprawl (Pima County 2001).

The majority of the population of Pima County resides in the eastern portion of the county, where residential units are the primary use in the built environment. Since adoption of the Pima County Comprehensive Plan in 1992, residential development has proceeded at lower densities than intended, fueled by large-lot development and lot splitting, both of which contribute to continued urban sprawl. The comprehensive plan update states that between 1993 and 2000, the county received 496 requests for rezoning, 380 of which were approved. Of the 10,988 acres entailed in the rezoning requests, 6,480 acres (59 percent) were for residential uses while only 356 acres (3.2 percent) were for commercial uses (Pima County 2001).

Residential Land Use

Regarding residential land use in Pima County, the comprehensive plan focuses on dynamic changes in the residential housing market over the last decade. It claims that between 1991 and 2000, the number of housing units sold in the county nearly doubled while the average sale price, expressed in actual dollars, rose from $97,352 to $155,907. Meanwhile, the average square

footage of single-family residences has more than doubled since 1950. The plan goes on to explain that the local real estate market has benefited higher-income residents of Pima County but left an affordability gap for many low-income residents. According to the Tucson Association of Realtor's residential sales statistics, less than 4 percent of all residential units sold in Pima County in 2000 were affordable for the lowest earning 20 percent of county residents. Meanwhile, the American Community Survey of 2000 found 47 percent of renters in Pima County were spending one-third or more of their household income on housing. This lack of affordable housing has contributed to detrimental land uses and unregulated development. The comprehensive plan also cites studies showing that despite growing more rapidly than many similar counties throughout the country, Pima County spent less on a per capita basis, collected less in growth-related fees, and provided less affordable housing programs than similarly situated county governments. In response to these issues, the Pima County Comprehensive Plan Update establishes regional policies that create a mixed-use, compact-development land use designation and promote the creation of strategies to provide affordable housing to median, low, and very low income level households (Pima County 2001).

The Tucson metropolitan area is adjacent to the Coronado National Forest in Pima County. Other communities near the forest are Oro Valley, Green Valley, and Sahuarita.

Sonoran Desert Conservation Plan

Beginning in 1998, the Pima County Board of Supervisors initiated a review of previous county planning efforts with an eye toward integrating effective natural resource management with sustainable urban development. Although not a comprehensive plan in the traditional sense, the Sonoran Desert Conservation Plan addresses many of the critical land use planning issues currently faced by Pima County. Mindful of the distinct correlation between urban growth and consumption of natural resources, the Sonoran Desert Conservation Plan serves three primary purposes. It creates a science-based conservation plan, it supports the update to the Pima County Comprehensive Plan, and it ensures compliance with Federal regulations requiring protection of endangered species to be addressed through a multiple species conservation plan. A primary goal of the plan is to direct future urban growth in Pima County toward areas with the fewest natural, historic, and cultural resource values. In addition to guiding future land use decisions in the county, the plan is also intended to serve as a reference for allocation of public resources for acquisition of open space and protection of cultural resources. Given the plan's emphasis on a comprehensive analysis of available science and the use of available geographic information system (GIS) data, an extensive list of stakeholders is credited with contributing to its development (Pima County 2004).

Critical Habitat and Biological Corridors

The Sonoran Desert Conservation Plan states that when the process of developing the plan began in 1998, basic information on the area's most vulnerable species, biological standards, and distribution of vegetation were not compiled in a format that could serve as a starting point for conservation planning. Since that time, an intensive research effort involving members of the local, regional, and national science community has resulted in a list of species and maps of corridors for 9 mammals, 8 birds, 7 reptiles, 7 plants, 6 fish, 2 amphibians, and numerous invertebrates in need of habitat protection. The plan's science technical advisory team identified the following priority habitats and corridors: Altar Valley, Baboquivari Mountains, Cienega Creek, Eastern Tucson Riparian Complex, Organ Pipe/Goldwater Complex, Sabino Canyon, San

Pedro River, Santa Rita Mountains, Silverbell Mountains, Tortolita Mountains, and Tucson Mountains (Pima County 2004).

Riparian Protection

The Sonoran Desert Conservation Plan claims that 60 to 75 percent of all species in Arizona rely on a riparian environment at some point during their life cycle. This assertion adds urgency to the need for riparian protection given that several perennial watercourses in Pima County have ceased flowing or have been significantly impacted by lower water tables. In addition to the obvious impact from development activities, the plan warns of the negative effects of groundwater pumping and the introduction of invasive, nonnative species into the county's riparian areas. The plan cites previous riparian restoration and protection efforts in Cienega Creek, Tanque Verde Wash, San Pedro River, and Sabino-Bear Canyon as positive examples of conservation strategies that have not only protected wildlife and plants but also provided recreational opportunities, promoted groundwater recharge, protected water quality, and mitigated flooding. The plan's science technical advisory team identified the following priority riparian resources: Rincon Creek, Cienega Creek, Arivaca Creek, Brown Canyon, Wakefield, Sutherland, Happy Valley, portions of San Pedro River, Davidson Canyon, Gardner Canyon, Madera Canyon, Agua Verde Wash, and Sopori/Papalote Wash (Pima County 2004).

Mountain Parks

The preservation of Pima County's mountain areas began in 1929 with the establishment of Tucson Mountain Park. Since then, similar protection efforts have led to the creation of Tortolita Mountain Park, Ironwood Forest National Monument, Colossal Cave Mountain Park, Cienega Creek Natural Preserve, and Buehman-Bingham Natural Preserve. Nonetheless, the Sonoran Desert Conservation Plan states that a continuing decline in the county's natural resource base shows this incremental approach to conservation over the last 70 years has not adequately protected vulnerable habitats and species. The plan's science technical advisory team identified the following priority mountain parks and natural preserves: Buehman-Bingham Natural Preserve, Cienega Creek Natural Preserve, Santa Rita Mountain Park, Colossal Cave Mountain Park, Davidson Canyon Natural Preserve, Tucson Mountain Park, Catalina State Park, Tortolita Mountain Park, and Ironwood Forest National Monument (Pima County 2004).

Cultural Resources

The Sonoran Desert Conservation Plan notes Pima County has had a continuous human presence for approximately 12,000 years. In an effort to protect the county's historical and cultural resources, the plan identifies numerous archaeological sites, historic buildings, national registers, historic communities, ghost towns, and historic trails as worthy of protection. An important task in delineating areas and sites for protection involved the development of digital data layers that compare core biological, habitat, and riparian areas with specific historic locations to determine where they overlap and where they are distributed separately. The Sonoran Desert Conservation Plan identified the following priority cultural resources: ancient Native American villages, the Mission San Xavier del Bac, Mexican and U.S. territorial-era ranches, Fort Lowell, historic mines, existing examples of traditional Sonoran and Victorian architecture, as well as several churches, schools, bridges, and parks, many of which lie at the core of the Tucson metropolitan area (Pima County 2004).

Ranch Conservation

The Sonoran Desert Conservation Plan credits ranching with having been "the single greatest determinant of a definable urban boundary in eastern Pima County," explaining that over half of the county's 2.4 million acres of open land has been in continual use for the purpose of ranching enterprises. Expected benefits of ranch conservation identified by the plan include preservation of open space, mitigation of urban sprawl, and maintenance of habitat continuity and the rural heritage and culture of the Southwest. The primary threat facing ranchlands is urban encroachment and land fragmentation from conversion to real estate development. Ongoing drought, legal challenges to grazing leases, and lucrative land prices also contribute to the trend of ranch conversion. The Sonoran Desert Conservation Plan states that, currently, ranch conversion and fragmentation is greatest within a 25-mile radius of the Tucson urban core. The plan identifies a number of "subareas" where ranching comprises a significant proportion of land use and is supported by sufficient grazing capacity and stability to support future sustainable ranch use. These subareas are Altar Valley, Empire-Cienega Valley, Upper Santa Cruz Valley, San Pedro Valley, and the Ironwood Forest National Monument area of Avra Valley. Meanwhile, the plan identifies the central Santa Cruz Valley and portions of the Tortolita Fan as areas "least likely to retain ranch uses in the future" (Pima County 2004).

Detailed maps of each of the protection areas under the Sonoran Desert Conservation Plan are available for viewing at http://www.co.pima.az.us/cmo/sdcp/maps.html

Pinal County Comprehensive Plan

The Pinal County Comprehensive Plan stresses the cultural and economic importance of managing land use to protect the county's natural resource base. Traditional land uses such as ranching, farming, and mining have experienced a gradual decline throughout the county. An increase in urban, commercial, and industrial developments has placed increasing pressure on the area's natural resources. Protection of desert open space, wildlife corridors, and undeveloped mountain areas is seen as a critical step toward sustaining a rural lifestyle as well as the economically vital components of retirement housing and tourism (Pinal County 2001).

Currently, Pinal County covers 3,441,920 acres, portions of which lie within the Gila River, Ak-Chin, Tohono O'odham, and San Carlos Native American communities. In addition to several rapidly growing incorporated cities and towns, the county is home to the unincorporated communities of Arizona City, Dudleyville, Gold Canyon, Maricopa, Oracle, Picacho, Queen Valley, Red Rock, San Manuel, and Stanfield. The town of Oracle is adjacent to the Santa Catalina Mountains and the Coronado National Forest. The comprehensive plan specifically mentions maintenance of mountain views as vital to the long-term economic and environmental interests of the county. These mountains include the San Tans, Superstitions, Sierra Estrella, Santa Catalina, Table Top, Palo Verde, Casa Grande, Sacaton, Picacho Peak, Sawtooth, Tortolita, Black, and Samaniego Hills (Pinal County 2001).

Adopted in December 2001 and amended in December 2004, the Pinal County Comprehensive Plan is seen as an important tool for managing land use during a period of dramatic growth and transition. In it, planners call for a reexamination of planning methods in order to ensure the sustainability of both the regional economy and standard of living in light of a projected 60 percent increase in county population over the next decade. Stated objectives in the land use element of the comprehensive plan include the following: (1) more efficient land use enabled by

clustered development, architectural controls, and development standards; (2) an improved county roadway network that effectively links residential and employment centers while retaining panoramic views, natural washes, and wildlife habitat; and (3) a diverse mix of employment and housing opportunities that balances resource conservation and development needs. The comprehensive plan divides land use into several designations. The intent of the land use categories is to determine development patterns that will be both economically and environmentally sustainable during a period of rapid urban growth (Pinal County 2001).

"Rural Areas" are areas suitable for lower-density development and uses such as agriculture, grazing, mining, sand and gravel operations, large acreage home sites, and small farms. Multi-family development is discouraged in rural areas and single-family residency should not exceed one dwelling unit per acre.

The "Transitional Area" designation is used for areas that are predominantly rural but are expected to serve as future centers of growth. A primary purpose of this designation is to retain existing large tracts for potential development. Here again, maximum residential density is one single-family unit per acre.

A "Foothill Area" designation is intended to preserve sensitive areas by limiting foothill development to low densities that are in harmony with the natural landscape. Maximum density is one dwelling unit per acre.

The "Rural Community Area" designation signifies a rural area with the capacity to provide goods, services, and increased residential uses. Growth is typically slower in these areas and is dependent on the level of public services, facilities, and infrastructure. Future rural community areas should be designed to allow for commercial uses, governmental activity, health and educational facilities, industrial uses, and parks and open space. For planned area developments, under this designation, the maximum density is three-and-a-half single-family dwelling units per acre. This designation also allows for 5 attached homes (town houses, patio homes) per acre or 12 multiple-family units (apartments) per acre (Pinal County 2001).

The "Urban Area" designation is applied to areas with higher density residential development and the existing infrastructure to support larger populations. Urban areas primarily include towns and cities and are likely to account for the majority of future growth in Pinal County. The purpose of the urban area designation is to encourage the provision of high quality, efficient public services, as well as diverse housing and employment opportunities. Maximum density guidelines are 3.5 dwelling units per acre for planned area developments, 5 dwelling units per acre for attached homes, and 12 dwelling units per acre for multiple-family units.

A "Commercial Activity Center" designation allows intense concentrations of commercial and high-density residential development. Land uses include retail stores and services, office development, business parks, and high density multi-family development. An expected benefit of this designation is the proximate location of housing and employment centers. Multiple-family housing density ranges from 12 to 20 dwelling units per acre with an ideal density of 16 dwelling units per acre.

An "Interchange Mix Area" designation caters to the needs of travelers and businesses along the county's highways. Land uses include, but are not restricted to, hotels and motels, vacation resorts, restaurants, recreational vehicle (RV) parks, service stations, and other small-scale commercial uses.

"Corridor Mix Areas" are similar to interchange mix areas in that they provide for a variety of land uses and intensities oriented toward and compatible with interstate highways. In addition to the land uses prescribed for interchange mix areas, corridor mix areas may include industrial parks, research and development facilities, light industry, warehousing, and recreation facilities. Open space, landscaping, and noise buffering are encouraged to ensure compatibility with adjacent land uses and traffic (Pinal County 2001).

An "Industrial Area" designation applies specifically to areas suitable for industrial and other intense land uses. The plan specifies these areas will be concentrated and separated from residential and commercial uses to manage the impacts of heavy truck traffic, noise, vibration, light, dust, and odors.

A "Mining Area" designation applies only to those areas where mineral resources have been identified or are likely to be identified in the future. The designation recognizes the rights applied to exploration, mining, and mineral resource processing. All mining operations within the county are required to comply with Federal, State, and local laws providing environmental protection.

"Development Sensitive Areas" are intended to preserve natural resources and open space in areas that are particularly sensitive. Potential land uses are parks, ranching, livestock grazing, conservation leases, guest ranches, and single-family uses. Density is not to exceed three-tenths dwelling units per acre.

The "Natural Resource Area" designation is applied to private and public lands which may be enhanced by the maintenance of large, undivided parcels. Land uses may include river corridors, natural areas, livestock grazing, conservation leases, national forests, wilderness areas, and State Trust lands (Pinal County 2001). A detailed map of land use within Pinal County is available at: http://www.co.pinal.az.us/PlanDev/PDCP/files/CompPlanFinal2004.pdf

In June 2015, Pinal County initiated a 60-day review period for major amendments to their Comprehensive Plan. Proposed 2015 amendments address health foods, green energy, medical marijuana, and a new housing development (Pinal County 2015).

Santa Cruz County Comprehensive Plan

Land use patterns in Santa Cruz County have long been shaped by the traditional activities of farming, ranching, and mining. Increasingly, however, development in the area is influenced by its proximity to the major international border crossing in the city of Nogales and by a burgeoning community of retirees. Adopted in June 2004, the Santa Cruz County Comprehensive Plan seeks to protect both natural resources and a rich cultural heritage by concentrating and regulating future land development (Santa Cruz County 2004).

Historically, development in Santa Cruz County has been concentrated along the Santa Cruz River, a pattern sustained since the construction of Interstate 19, which follows the same north-south orientation. The comprehensive plan claims that, between 1990 and 2000, the unincorporated areas of Santa Cruz County grew by 79 percent while the cities of Nogales and Patagonia experienced relatively minimal growth (7 percent and -4 percent respectively). Of all the growth in unincorporated areas, 93 percent occurred on the western side of the county along the I-19 corridor in the communities of Amado, Tubac, Rio Rico, and south to Nogales city limits. It is expected that development over the next decade will continue to be concentrated along this

corridor. The Santa Cruz County Comprehensive Plan projects a high rate of population growth (6.5 percent per annum through 2010) resulting from natural increase as well as substantial immigration from other areas (Santa Cruz County 2004). In anticipation of this growth trend, the comprehensive plan includes a specific element devoted to county growth areas. There are 7 growth areas, each located west of the Santa Rita Mountains: the airport, Amado, the I-19 Corridor (Rio Rico to Nogales), the Kino Springs Village Center, Rio Rico Drive East, Ruby Road, and Tubac.

Given the likelihood for continued population growth and the resulting need for residential and commercial development, Santa Cruz County intends to concentrate future land use in a way that maintains a rural character, protects natural resources, and makes efficient use of existing and future infrastructure. While the comprehensive plan claims the county has a substantial amount of private, undeveloped land which is easily accessible from primary roadways, future growth is likely to have a pronounced impact on the county's natural resources and existing development patterns. For instance, new development in the county has begun to shift from individual homes constructed on private lots to production housing. In the past 5 years, approximately 30 percent of requests for residential rezoning were for parcels larger than 100 acres. Of these, over 40 percent are at densities exceeding 4 dwelling units per acre. In response, the plan encourages maintaining existing land use intensities and densities in the Sonoita-Elgin area while allowing urban-style development in the Rio Rico area and, to some extent, around Tubac and Kino Springs. According to the plan, future employment centers will be focused south of Rio Rico along the I-19 corridor, and commercial uses specific to the county's tourism industry will be encouraged at the Sonoita crossroads of SR 82 and SR 83 (Santa Cruz County 2004).

Based on the clear demarcation of land uses along the I-19 corridor and those in other locations throughout the county, the land use element of the comprehensive plan refers to two general types of land use intensities and densities: urban and rural. The land use categories described under each of these two classifications are described below.

Rural Land Use

The "Ranch 40" category signifies very low-density residential, ranching, agricultural, viticultural, low-impact tourism, or resource conservation uses. Maximum residential density in this category is 1 dwelling unit per 40 acres. A "Ranch" designation allows the same land uses as Ranch 40; however, in this category, maximum residential density is greater: 1 dwelling unit per 4 acres. The "Public Lands" category includes all Federal public land managed by the Department of Agriculture and the Department of the Interior, as well as State lands managed by the State Parks Department. Land use in the "State Trust" category includes grazing and conservation as well as other uses in accordance with regulations of the State Land Department. Principle land uses in the "Preservation" category include historic sites, museums, research study areas, and permanent open space. Residential and light commercial uses related to the principle preservation function are also permitted. The "Local Services" designation is applied to areas whose primary land use includes retail, restaurants, tourism services, and low-impact neighborhood services (Santa Cruz County 2004).

Urban Land Use

Principle land uses in the "Low Density Residential" category include residential use as well as low-intensity tourism services, restaurants, and neighborhood services. Maximum residential density in these areas is 1 dwelling unit per acre. "The Medium Density Residential" category

allows residential, office, and commercial services with a maximum density of 3 dwelling units per acre. The principle land uses in the "High Density Residential" areas include residential, retail, office, and commercial services. Maximum density for single- and multi-family residences in this category is 10 dwelling units per acre. In the "Mixed Use" category, high-density residential uses are integrated with retail, services, and employment uses in areas accessible to infrastructure and public services. Maximum residential density in the mixed use category is 10 dwelling units per acre. The "Regional Services" designation is applied to areas where the primary uses are high-intensity commercial, employment, and retail uses, which are regionally significant and are easily accessible from major transportation corridors and population centers. The primary land uses in the "Enterprise" category are heavy commercial and industrial enterprises with major employment potential. This category is situated to take advantage of facilities and major transportation corridors.

A detailed map of land use in Santa Cruz County is available at http://scc-mail.co.santa-cruz.az.us/commdev/commdev1/Santa%20Cruz%20County%202004%20Comprehensive%20Plan.pdf

Cities and towns in Santa Cruz County adjacent or close to the Coronado National Forest are Nogales, Amado, Patagonia, and Arivaca.

Hidalgo County Comprehensive Plan

Hidalgo County is a sparsely populated, primarily agricultural area in the southwestern corner of New Mexico. Adopted in 2004, and updated and readopted in 2011, the Hidalgo County Comprehensive Plan identifies and analyzes growth and development issues and establishes a framework of community values, goals, and strategies to guide development over the next 20 years. The plan defines a community vision and describes the seven elements of land and water, economic development, housing, transportation, infrastructure/community facilities, hazards mitigation, and implementation. For each element, existing conditions and issues are identified followed by values, goals, and implementation strategies (Hidalgo County 2011).

Communities (cities or towns) in Hidalgo County, New Mexico that are adjacent or near the Coronado National Forest include Rodeo and Cloverdale.

Conclusion for Counties

The Coronado revised forest plan would not conflict with the overall mission or goals of these counties or their plans.

Community Wildfire Protection Plans

Currently, six community wildfire protection plans outline goals for at-risk communities in and around the Coronado National Forest:

- Arivaca Sasabe Community Wildfire Protection Plan – November 2007
- Catalina Community Wildfire Protection Plan – September 2008
- Graham County Community Wildfire Protection Plan – November 2005
- Mount Lemmon Wildland-Urban Interface Plan for Forest Health Wildland Fire Management – July 2004
- Pinal County Community Wildfire Protection Plan – February 2009
- Sonoita Elgin Community Wildfire Protection Plan – December 2007

Community wildfire protection plans are developed by communities in response to the Healthy Forests Restoration Act of 2003 (HFRA). HFRA requires Federal agencies to collaborate with communities in developing hazardous fuel reduction projects and places priority on treatment areas identified by communities through the development of a community wildfire protection plan. A primary objective of a community wildfire protection plan is to help local governments, fire departments and districts, and residents identify at-risk public and private lands to better protect those lands from severe wildfire threat. Additional functions of a community wildfire protection plan are to improve fire prevention and suppression activities and identify funding needs and opportunities to reduce the risk of wildfire and enhance public and firefighter safety. Identifying at-risk areas and improving fire protection capabilities helps the communities to prioritize high-risk projects and expedites overall project planning. These plans are used by Coronado National Forest land managers to help prioritize areas for hazardous fuel reduction treatments adjacent to at-risk communities.

The Coronado revised forest plan would not conflict with the overall mission or goals of these plans.

Fire Management Plans

The Coronado is bordered by other Federal land agencies that are required to have a fire management plan in place. Existing plans include:

- Saguaro National Park Fire Management Plan (July 2007)
- Coronado National Memorial Fire Management Plan (June 2005)
- Bureau of Land Management Safford-Tucson Fire Management Zone Fire Management Plan (September 2004)

Interagency Federal fire policy requires that every area with burnable vegetation must have a fire management plan. The plan provides information about the fire process for each land management agency and compiles guidance from existing sources such as land and resource management plans, national policy, and national and regional directives. Although agency-specific guidance and direction may differ between agencies, the fire management plans listed above do not conflict with land management on the Coronado.

The Coronado revised forest plan would not conflict with the overall mission or goals of these plans.

Tribes

Federally recognized American Indian tribes occupy about 53.5 million acres (7 percent) of land in the western states. The San Carlos Apache Reservation borders the north side of the Coronado National Forest. Tribes are legally considered to be sovereign nations, so the relationship between the Forest Service and the tribes is a government-to-government relationship. Tribes that enter into contracts with the Federal Government do so just as state governments or sovereign nations do.

However, the Federal Government also holds a special responsibility to consult with tribes over management issues that may affect them. This process is governed by a variety of Federal regulations and policies, including Forest Service Handbook 1509.13, the National Environmental Policy Act, the National Indian Forest Resources Management Act, the Tribal Forest Protection Act, the Archeological Resources Protection Act, and several presidential executive orders.

Tribes' use of National Forest System land includes free, nonpermitted activities such as gathering boughs and basket materials as well as the use of products such as sawtimber. In addition, the Coronado National Forest includes traditional cultural places, the locations of which are known only to the tribes.

San Carlos Apache Tribe (Nde Nation)

Forest Management

A review of the San Carlos forestry website indicates that the tribe has a forest resources program, including timber sales, thinning, woodcutting, and fire activities.

Recreation and Wildlife

A recreation permit is required for nonmembers and allows entry on the reservation for any recreational activities (hike, picnic, tour, camping), other than hunting or fishing.

Wildlife resources include Rocky Mountain elk, Coues white-tailed deer, Rocky Mountain bighorn sheep, desert bighorn sheep, javelina, pronghorn antelope, black bear, mountain lion, wild turkey, predators, and other small game. The Drylake and Hilltop trophy elk units are managed for older age structure and have produced some of the largest elk in the world.

Transportation

Information on transportation issues on the San Carlos Apache Reservation can be requested through the Intertribal Council of Arizona's Transportation Working Group.

The Coronado revised forest plan would not conflict with the overall mission or goals of the San Carlos Apache Tribe or their plans.

State of Arizona

Arizona Department of Environmental Quality

The Arizona Department of Environmental Quality's mission is to protect and enhance public health, welfare, and the environment in Arizona. The agency serves as the State's environmental regulatory agency in the areas of air and water quality and waste programs. Forest management activities strive to be in compliance with the applicable Arizona revised statutes (particularly Title 49, which outlines specifics such as water quality standards and total maximum daily loads).

Arizona Department of Water Resources

The Arizona Department of Water Resources mission is to secure long-term dependable water supplies for Arizona. The department administers and enforces the State's groundwater code and surface water rights laws. Title 45 of the Arizona revised statutes contains the provisions related to water and groundwater resources.

Arizona Department of Agriculture

The Arizona Department of Agriculture is the State's regulatory agency for agriculture, including animals, plants, and environmental services. Title 3 of the Arizona revised statutes contains the provisions related to agricultural topics such as dangerous plant pests and diseases, pesticides, brands and marks, and seizure of livestock.

Arizona Department of Transportation

The Arizona Department of Transportation (ADOT) is responsible for planning, building, and operating a state highway system and maintaining bridges.

Improvement and Construction

The State Transportation Improvement Program (STIP) for Fiscal Years 2015-2019 was approved in November 2014, and the 2015-2019 Five-year Transportation Facilities Construction Program was approved in June 2014 (ADOT 2015). These documents identify priority and planned improvements and construction over the next five years. A variety of planned construction, improvements, and rehabilitation projects associated with the following highways may affect forest management:

- Interstates 10 and 19
- U.S. Highways 70 and 191
- State Routes 75, 77, 80, 82, 86, 90, 92, and 189

Long Range Planning

In May 2012, the Arizona Department of Transportation, the U.S. Forest Service Southwest Region, and the Central Federal Lands Highway Division approved and implemented the 2011 to 2030, Arizona Forest Highway Long Range Transportation Plan. The plan gives the description and goals of the long range program of the Arizona Forest Highway Program. The guiding principles include access and mobility, economic vitality, safety, stewardship, and environmental

sensitivity. The plan provides a project selection process and funding and investment strategies to ensure that the forest highways are maintained.

The ADOT Long-Range Transportation Plan 2010 – 2035 was completed in November 2011 (ADOT 2011). Key goals and strategies of the plan include:

- **Improve Mobility and Accessibility** – Implement critical and cost-effective investments in infrastructure to expand access to transportation, and optimize mobility and reliability in the transportation of passengers and freight.
- **Preserve and Maintain the System** – Maintain, preserve, and extend the service life of existing and future State transportation system infrastructure.
- **Link Transportation and Land Use** – Protect the capacity of the State transportation system by developing policies and partnerships that strengthen the coordination of land use and transportation planning and implementation. Objectives focus on coordinating with public agency land use planning.
- **Support Economic Development** – Develop and operate a State transportation system that provides predictable freight and people movement throughout the State to support a competitive and thriving economy for Arizona.
- **Enhance Safety and Security** – Continue to improve transportation system safety and ensure the security of the transportation system. Objectives are to maintain and enhance transportation safety, reducing crashes, injuries, and fatalities.
- **Promote Natural, Cultural, and Environmental Resources** – Protect and restore the natural, cultural, environmental resources of Arizona while improving and maintaining the transportation system. Objectives include: implement transportation solutions that improve mobility, enhance communities, and protect and restore the environment; implement an ecological connectivity approach to transportation planning and system development; collaborate with government agencies and other stakeholders to identify and consider natural habitats, the human environment, and protected natural or cultural resources when planning new or improved transportation services.
- **Promote Fiscal Stewardship** – Provide a sound financial base for Arizona's transportation system through responsible management of public assets and resources, and identification and implementation of funding strategies to ensure long-term balanced investment in the State's transportation system.
- **Strengthen Partnerships** – Develop and nurture partnerships that support coordination and integration of the Arizona Department of Transportation planning and investment in State transportation infrastructure with public and private organizations and agencies responsible for land use, conservation, and environmental planning, and freight infrastructure.

Scenic Byways

The Arizona Department of Transportation's environmental and enhancement group prepared the Coronado Trail Corridor Management Plan in March 2005. This plan identifies the goals and objectives for the byway corridor.

Arizona Game and Fish Department

The Arizona Game and Fish Department's (AGFD) Strategic Plan for the Years 2007-2012 Wildlife 2012 provides management direction for the department's program of work. The plan contains several goals and objectives that may have an impact on Coronado National Forest management:

- **Wildlife Resource Management:** Conserve, preserve, enhance, and restore wildlife populations and their habitats.
    - Conserve, preserve, enhance, and restore Arizona's wildlife habitat and resources while balancing resource needs with recreational uses.
    - Maintain or improve the quality and connectivity of habitats to support a diversity of wildlife species.
    - Minimize the negative impacts of invasive species on wildlife and their habitats.
    - Improve the status of wildlife, with particular emphasis on those species listed as Species of Greatest Conservation Need.
    - Provide for sustainable use of wildlife by people.
- **Wildlife Recreation** – Increase the opportunity for the public to enjoy Arizona's wildlife resources, while maintaining and improving wildlife resources. In addition, address the underlying reasons for denial of public access across private lands by providing technical and financial assistance to private land owners and educating the public about ethical use and habitat protection.
    - Encourage continued compliance with regulations governing wildlife-related recreational activities.
    - Promote public safety during wildlife-related recreation activities.
    - Increase opportunities for use and enjoyment of wildlife.
    - Increase participation in wildlife-oriented recreational activities.
    - Provide access to public and other lands that are blocked by private lands.
- **Public Awareness, Support, and Involvement** - Maintain an informed and supportive public that recognizes its ownership and stewardship responsibilities for wildlife resources and helps to disseminate and act upon messages about watercraft safety and the safe, responsible, and ethical use of off-highway vehicles.
    - Increase public awareness and support of the North American Model of wildlife management. The North American Model asserts that wildlife is held in public trust — not owned by any one person or entity, regardless of whether the animal is on public or private land or water. Professionals manage wildlife based on the overall public good.
    - Increase the percentage of the public that identifies the department as the State agency responsible for wildlife management in Arizona.
    - Promote the widespread use of environmental education curriculum in public, private, charter, and home schools.
    - Improve media and e-newsletter communication.
    - Increase efforts to inform the public about living responsibly with wildlife.

  - Increase participation in hunter education, aquatic education, boating safety education, and shooting sports programs.

- **Off-Highway Vehicle, Watercraft, and Shooting Sports Recreation Goals** - Increase the opportunity for the public to enjoy shooting sports. Encourage participation in education and information programs supporting safe and responsible use of off-highway vehicles and watercraft, while maintaining or improving wildlife resources and habitats.
  - Encourage continued compliance with regulations governing watercraft, off-highway vehicle, and recreational shooting sports activities.
  - Reinforce public safety during watercraft, off-highway vehicle, and recreational shooting sports activities.
  - Increase management of off-highway vehicles and efforts to minimize their impacts on wildlife and wildlife habitat.
  - Improve the watercraft recreational experience.
  - Minimize impacts to aquatic resources from increased watercraft use.
  - Increase participation in boating safety education and shooting sports programs.
  - Continue to work with interested user groups and agencies to protect existing funding and acquire new funding sources dedicated to safe and responsible off-highway vehicle use.
- **Customer Diversity** – Increase customer diversity to better reflect the demographics of Arizona.
  - Increase the diversity of department customers (culture, ethnicity, sex, age, income, and ability).
- **Partnerships** - Maintain and develop effective partnerships that enable the department and its partners to reach mutual goals.
  - Enhance the department's ability to manage wildlife resources.
  - Reinforce responsible and safe OHV and watercraft recreation that minimizes impacts on wildlife resources and habitats.
  - Provide recreational shooting opportunities through partnerships.

The Arizona State wildlife action plan, titled "Arizona's Comprehensive Wildlife Conservation Strategy: 2005-2015," was approved in 2006 and provides the vision for managing Arizona's fish, wildlife, and wildlife habitats over the next 10 years. The plan contains several key elements which may provide information to, or have an impact on, Coronado National Forest management:

- **Species of Greatest Conservation Need** – The Arizona Game and Fish Department prioritized a list of species for conservation actions aimed at improving conditions for those species through intervention at the population or habitat level. Over 300 species were identified as being vulnerable or the species with the greatest conservation needs.
- **Habitats of Greatest Conservation Need** – The Arizona Game and Fish Department divided the state into 17 vegetation types. All of these habitats were treated as habitat in need of conservation. A statewide habitat analysis that answers the question of where to focus in each habitat has not been completed.

- **Stressors/Threats to Arizona's Wildlife and Wildlife Habitats** – The Arizona Game and Fish Department identified 70 stressors that have serious impacts to habitat in Arizona and an additional 4 stressors that act on species alone. The stressors were categorized into: a rapidly increasing human population, changes to water storage and delivery systems in the Southwest, alteration of communities by invasive nonnative species, and the ongoing drought and warming trend.
- **Conservation Actions for Arizona's CWCS** – The Arizona Game and Fish Department identified several action items to address stressors, these action items will be implemented where feasible and appropriate.

    - **Conserving Wildlife Habitat**
        - Promote the restoration and protection of aquifers, springs, streams, rivers, lakes, and riparian systems. Support regulations ensuring minimum instream flow and water rights for wildlife resources.
        - Perform landscape classification analyses to identify sensitive habitats, core wildlife areas, and important wildlife corridors.
        - Acquire ecologically important lands, access agreements, conservation easements, water rights, or some combination of these things.
        - Support State planning efforts to address drought issues as they relate to wildlife resources.
    - **Maintaining and Reestablishing Habitat and Habitat Connectivity**
        - Promote maintenance and restoration of habitat connectivity by removing or modifying barriers, protecting corridors and riparian areas, and using wildlife-friendly roadway crossing structures.
        - Promote maintenance and restoration of habitat connectivity by removing unneeded fences, by using wildlife-friendly barriers in future projects and when replacing old fences.
        - Develop standards for new road, utility and power lines construction, and modification of existing structures and corridors to reduce impacts to wildlife.
    - **Wildlife Management**
        - Promote implementation of recovery plans, habitat conservation plans, and other cooperative agreements for sustaining wildlife resources. Develop plans to conserve priority conservation species (focal community; responsibility, and vulnerability categories) that are not sufficiently addressed under existing plans.
        - Manage so as to sustain or enhance sport fish and native fish populations.
        - Develop contingency plans for rapid salvage of wildlife populations threatened with extirpation in situations of imminent habitat loss.
        - Maintain and construct new wildlife water developments. Encourage conversion of livestock waters so they are also continuously usable by wildlife.
        - Collaborate with partners to evaluate sampling techniques, reduce duplication of effort, and develop pathogen decontamination protocols to limit impacts to wildlife.

- Collaborate with partners on disease/pathogen/parasite issues to wildlife including development of action plans to manage existing sources, identify, and respond to new threats, and to educate the public.
- Evaluate, update, and enforce existing department regulations to address evolving concerns about hybridization, nuisance animals, illegal stocking, and spread of animals used for bait.
- Reduce/eliminate the effects of feral animal populations in sensitive habitats or near wildlife populations of concern.

♦ **Public Education and Law Enforcement to Benefit Wildlife and Wildlife Habitat**

- Educate the public about the impacts of free-ranging or feral animals, release of nonnative species, and illegal stocking of fish and live bait on wildlife resources. Increase enforcement of existing laws and promote more stringent laws prohibiting the release of domestic or nonnative animals into the wild.
- Utilize education and enforcement to promote human behavior that does not encourage wildlife to become a nuisance (for example: feeding wildlife, securing waste containers, and storage of food). Increase awareness of effects of feeding and litter on wildlife.
- Increase public awareness of how water conservation and ensuring instream flow can benefit wildlife.
- Encourage the use of low water use native plants in landscaping.
- Educate the public regarding identification of contaminants, release prevention, and impacts to wildlife and habitats. Promote alternatives that reduce release of contaminants.
- Encourage cooperative cleanup efforts of wildlife habitats.
- Increase public awareness of the potential effects of various types of recreation on wildlife resources. Encourage responsible outdoor recreation through education (for example: “Stay on the Trails,” “Leave No Trace,” “Be Bear Aware,” “Stop Aquatic Hitchhikers”), enforce existing laws, and encourage development of new legislation.
- Inform the public and land management agencies on the effects of illegal harvest of wildlife. Cooperate with land management agencies to increase enforcement of existing laws.
- Support prevention and suppression of accidental or arson-caused wildfire through information and education and enforcement of appropriate regulations.
- Educate the public on the importance of community focal species (including predators, prey, wide-ranging species, keystone species, etc.) for ecosystem health.

♦ **Representing Wildlife Values in Multiple-Use Planning**

- Provide recommendations to State and Federal partners on the development of new land management plans or revising existing plans as they relate to wildlife resources.
- Cooperate with State, Federal, tribal, and local government partners to develop and implement watershed management plans that incorporate wildlife and habitat values.

- Prevent loss and degradation of sensitive habitats through involvement of planning efforts with local governments, private land owners, and agency and tribal land managers.
- Promote restoration of natural fire regimes for improving grassland and forest health.
- Promote adoption of sustainable forage management standards and guidelines for livestock and wildlife.
- Promote conservation of sensitive areas and habitats for wildlife.
- Encourage development and implementation of standards and guidelines for mining and landfill operations that consider the needs of wildlife resources.
- Encourage land management agencies to manage road and trail networks to ensure sustainable wildlife resources in balance with recreational opportunities, economic pursuits, and rural development.
- Coordinate with land managers, counties, municipalities, and private sector partners to promote ecologically sensitive design of recreational facilities such as campgrounds, parks, golf courses, ski resorts, etc.

♦ **Representing Wildlife Values in Other Processes**

- Coordinate to reduce impacts to wildlife along the U.S.-Mexico border.
- Encourage the operation of dams, canals, and diversions for improving or maintaining wildlife resources. Promote wildlife values in building new, renovating existing, or removing old water retaining structures.
- Promote programs for eliminating or limiting the spread of invasive plants and animals, and the recovery or reintroduction of native populations.
- Limit the spread of invasive plants and promote the restoration of native vegetation in disturbed areas.
- Support land management and regulatory agencies in enforcing best management practices to prevent the introduction of toxins into ecosystems.
- Promote the use of engineered wetlands, discharge basins, and augmented riparian vegetation to pretreat water prior to release into riparian systems. Promote the use of treated effluent to create wildlife habitat.
- Cooperate with land management agencies and municipalities on revising waste management plans to minimize impacts to wildlife resources.

Arizona State Land Department

The practice of allocating public lands for various beneficiaries in Arizona dates back to the founding of the territory in 1863. The current system of managing these lands, referred to as State Trust lands, was established with the Arizona State Land Department (ASLD) in 1915.

Since its inception, the Arizona State Land Department has been granted authority over all trust lands as well as the natural products they provide. This authority over trust land is central to the department's primary mission of maximizing revenues for its beneficiaries, a role that distinguishes it from other agencies charged with management of public lands (national parks, national forests, state parks, etc.).

As of 2008, the Arizona State Land Department managed over 9 million acres in land holdings for 14 beneficiaries, the most prominent of which is the K-12 public school system. Most of the State lands can be used for livestock grazing purposes only. Public use of the lands is regulated by permit. Recreational permit allows the signatory limited privileges to use State Trust Land for some recreation. Recreation under this permit is limited to hiking, horseback riding, picnics, bicycling, photography, sightseeing, and bird watching. Camping is restricted to no more than 14 days per year. Off-highway vehicular travel on State Trust land is not permitted without proper licensing.

The Arizona State Land Department may dispose of (exchange) or lease the lands for natural resource use or commercial development purposes. Since State lands border much of the forests, any changes in management could affect management of the Coronado National Forest, especially for public access. The department prepares a 5-year plan that represents potential areas of concern to initiate land sales and long term leases. As of August 2017, this plan was not available.

Arizona State Parks

The mission of Arizona State Parks is to manage and conserve Arizona's natural, cultural, and recreational resources for the benefit of the people, both in our parks and through our partners (Arizona State Parks 2010).

Arizona State Parks manages numerous parks across Arizona. Five of these parks are near or on the Coronado National Forest: Catalina State Park, Oracle State Park, Kartchner Caverns State Park, Sonoita Creek State Natural Area, and San Rafael State Natural Area. Catalina State Park is located on National Forest System land on the Coronado National Forest and is operated by Arizona State Parks.

Arizona State Parks have seen a continual increase in visitation over the years, with over 1,000,000 visitors in 1985 to over 2,000,000 visitors in 2010 (Arizona State Parks 2010). The State and national financial crisis impacted the management of state parks. In fiscal year 2010, Arizona State Parks reduced the number of employees and closed 13 of its 28 parks (Arizona State Parks 2010).

The 2008 Arizona Statewide Comprehensive Outdoor Recreation Plan (SCORP) identifies the State's outdoor recreation priorities. The priority issues include: secure sustainable funding; plan for growth and secure open space; resolve conflicts; improve collaborative planning and partnerships; respond to the needs of special populations and changing demographics; fill the gaps between supply and demand; secure access to public lands and across State Trust lands; protect Arizona's natural and cultural resources; communicate with and educate the public (Arizona State Parks 2007). Several action items have the potential to influence National Forest System lands:

- Look holistically across geographic boundaries, disciplines, governments, private interests, and generations, and examine all benefits and costs, not just fiscal costs (in reference to growth).
- Expand options such as private land owner incentive programs and recreational liability laws, which would allow public access across private and State and Federal leased lands.

- Provide for off-highway vehicle use on public lands but manage it properly, to reduce conflicts with other recreation users and minimize the activity's impacts on natural and cultural resources, as is done for other recreational activities. Implement standards for constructing sustainable off-highway vehicle routes, involve user groups in planning, building, and maintaining satisfactory routes and facilities, and enact and enforce consistent off-highway vehicle laws and regulations.
- State and Federal agencies should implement coordinated interagency planning efforts for new recreational areas and trail systems to ensure an equitable regional distribution of desired recreational opportunities and access to natural environments.

The Statewide Comprehensive Outdoor Recreation Plan also identifies the major impacts and trends related to outdoor recreation in Arizona. Arizona offers a wide variety of outdoor recreation opportunities with 6 national forests, 21 national park sites, 8 national wildlife refuges, 8 Bureau of Land Management field offices, 21 Indian tribes, 30 State parks, 23 State wildlife areas, and hundreds of county and city parks and recreation areas. These public lands provide opportunities for activities such as picnicking, developed and primitive camping, wilderness backpacking, hiking, mountain biking, horseback riding, cross-country skiing, wildlife watching, hunting, fishing, boating, water skiing, rock climbing, four-wheel driving, motorized trail biking, all-terrain vehicle riding, and snowmobiling, among others (Arizona State Parks 2007).

The "Arizona Trails 2010: State Motorized and Nonmotorized Recreation Trails Plan" provides information and recommendations to guide Arizona State Parks and other agencies in their management of trails. The priority recommendations for motorized trails are: protect access to trails/acquire land for public access; maintain and renovate existing trails and routes; mitigate and restore damage to areas surrounding trails, routes, and areas; and establish and designate motorized trails, routes, and areas. The priority recommendations for nonmotorized trails are maintain existing trails, keep trails in good condition; and protect access to trails and acquire land for public access (Arizona State Parks 2009).

Conclusion for State of Arizona

The Coronado revised forest plan would not conflict with the overall mission or goals of the State of Arizona, its agencies, or plans.

State of New Mexico

New Mexico Environment Department

The New Mexico Environment Department's mission is to protect and restore the environment, and to foster a healthy and prosperous New Mexico for present and future generations. The agency serves as the State's environmental regulatory agency in the areas of air and water quality and waste programs. Forest management activities strive to be in compliance with the applicable New Mexico statutes, particularly Title 20, which outlines water quality standards and total maximum daily loads.

New Mexico Office of the State Engineer/Interstate Stream Commission

The New Mexico Office of the State Engineer is charged with administering the state's water resources. The State Engineer has authority over the supervision, measurement, appropriation, and distribution of all surface and groundwater in New Mexico, including streams and rivers that cross state boundaries. The Interstate Stream Commission has broad authority to investigate, protect, conserve, and develop New Mexico's waters including both interstate and intrastate stream systems. The commission is also authorized by statute to investigate and develop the water supplies of the state and institute legal proceedings in the name of the state for planning, conservation, protection, and development of public waters. Title 20 of the New Mexico statutes contains the provisions related to water and groundwater resources.

New Mexico Department of Agriculture

The New Mexico Department of Agriculture is the State's regulatory agency for agriculture, including animals, plants, and environmental services. Title 21 of the New Mexico statutes contains provisions related to agricultural production such as dangerous plant pests and diseases, pesticides, brands and marks, and seizure of livestock.

New Mexico Department of Transportation

The New Mexico Department of Transportation (NMDOT) is responsible for planning, building, and operating a state highway system and maintaining bridges. The New Mexico Department of Transportation Multimodal Transportation Plan contains direction for transportation and tourism. Multidisciplinary partnerships exist between State, Federal, local and tribal entities, and nongovernmental organizations concerned with environmental and cultural resource protection, tourism, economic development, and transportation. The current 2030 plan includes goals and objectives to combine scenic byways with state bicycle routes where appropriate to enhance recreation and tourism potential. The New Mexico Tourism Department is promoting green tourism, including scenic byways, mountain bike, equestrian, and hiking access points among transportation-related infrastructure.

The Coronado National Forest in New Mexico is in the Southwest Regional Planning Organization. Under the new 2040 Transportation Plan (currently in draft, see discussion below), there are no transportation goals or objectives directly related to Coronado National Forest land management. Further, there are no scenic byways in the vicinity of the Coronado National Forest in New Mexico (NMDOT 2015).

Improvement and Construction

The Statewide Transportation Improvement Program (STIP) for Fiscal Years 2014-2017 was completed in July 2015. This document identifies planned improvements and construction over the next several years. The planned improvements to the following highways may affect forest management:

- **Interstate 10** – FY2016 Pavement preservation and ramp reconstruction (from Lordsburg W. to 1 mile east of Lordsburg E. – NE of road forks)
- **Interstate 10** – FY2015 Bridge preservation and approaches, roadway reconstruction, pavement preservation and drainage (5 miles west of Hidalgo/Grant County line)

- **Interstate 10** – FY2015 Bridge deck replacement (4 miles east of Lordsburg)
- **Interstate 10** – FY2014 Bridge preservation (various National Highway System routes in Hidalgo County)
- **Interstate 10** – Install roadway weather information system and sensors, conduct land management tests and establish land strips to reduce dust (from Arizona state line to junction with I-25 in Hidalgo County)

Long Range Planning

The New Mexico Department of Transportation is currently updating their long-range statewide transportation plan, the New Mexico 2040 Transportation Plan. As of May 2015, the goals and objectives of the plan were in draft form and undergoing public review. The full plan is scheduled for completion by October 2015. Key goals and strategies of the plan include:

- **Operate with Transparency and Accountability** – Build trust and leverage external support for transportation initiatives by coordinating early, often, and successfully with Federal, State, regional, Tribal, local, and other agencies to plan, fund, and implement projects and programs.
- **Improve Safety for All System Users** – Reduce fatalities and serious injuries through data-driven, innovative, and proactive processes that include examination of safety hot spots and systemic safety concerns.
- **Preserve and Maintain our Transportation Assets for the Long Term** – Develop and implement a "preservation-first" asset management strategy to ensure that the New Mexico Department of Transportation will maintain all existing and future elements of the state's transportation system in a state of good repair.
- **Provide Multimodal Access and Connectivity for Community Prosperity** – Prioritize projects, programs, and activities that help minimize transportation infrastructure and service costs through coordination of transportation and land use planning (including site selection for public facilities).
- **Respect New Mexico's Cultures, Environments, History and Quality of Life** - Minimize or avoid negative impacts of facility development and operations on the natural environment, where possible. Work proactively with public and private-sector partners to advance state, regional, and Tribal tourism and recreational goals while minimizing adverse impacts to cultural resources.

New Mexico Department of Game and Fish

Forest plan revision on the Coronado National Forest considered and utilized results from the comprehensive wildlife conservation strategy for New Mexico. This strategy was developed by the New Mexico Department of Game and Fish. The focus of the strategy is on species of greatest conservation need and key wildlife habitats. The comprehensive wildlife conservation strategy assessed the condition of key habitats, species of greatest conservation need, problems affecting species and habitats, desired future conditions, and prioritized conservation actions and monitoring needs. The overriding desired outcome is that the key habitats persist in the condition, connectivity, and quantity necessary to sustain viable and resilient populations of resident species of greatest conservation need and host a variety of land uses with reduced resource use conflicts.

The strategy's desired outcomes were designed to conserve indigenous threatened or endangered wildlife and habitats to assure biodiversity.

In developmental stages of Coronado National Forest plan revision, the comprehensive wildlife conservation strategy was referenced and high priority species of greatest conservation need were included in the species lists identified for the Coronado's plan revision and then evaluated for viability.

Development of plan components is a process and outcome similar to comprehensive wildlife conservation strategy development and desired outcome determination. Coronado National Forest personnel evaluated ecological sustainability through assessing vegetation type relationships to key habitat sustainability for associated species. Plan revision included developing a set of plan components that include:

- desired conditions of vegetation components;
- objectives that have timeframe and measurable outcomes defined; and
- guidelines that provide restrictions and/or limitations on management or activities.

The Coronado's revised forest plan will complement the New Mexico comprehensive wildlife conservation strategy desired outcomes and benefit species through key habitat management on the Coronado National Forest.

The New Mexico Department of Game and Fish's strategic plan for FY 2008 through FY 2012 provides management direction for the department's program of work. The plan contains several goals and strategies relevant to Coronado National Forest management:

- **Sport Hunting and Fish Program:** The department's provision of statewide system for hunting activities and self-sustaining and hatchery-supported fisheries satisfies the participation expectations of New Mexico residents and takes into consideration hunter safety, quality hunts, high demand areas, guides and outfitters, quotas and local and financial interests.
    - Develop education and outreach initiatives so that 75 percent of New Mexico's hunting interests express understanding and support for the department's game management strategies.
    - Establish broadly-supported management objectives for 9 species of big game, 4 species of small game, and 7 species of fish that maximize recreational and economic benefits within the context of relevant biological, ecological, physical, social, economic, political, spatial, and legislative factors.
    - Ensure reported incidences of hunting accidents do not exceed 2 per 100,000 licensed hunters.
    - Maintain an overall angler satisfaction rate of 80 percent regarding angler opportunity, fishing experiences, and the department's management of sport fishing issues.
    - Maintain hunting and fishing opportunities through public compliance with wildlife laws.
    - Reach a level of public opportunity for recreational hunting and fishing as indicated by the sale of 350,000 and 400,000 licenses, respectively.

- Restore up to 70 user-days of public hunting and up to 200 user-days of fishing opportunity for selected diminished game species and furbearers.
- Maintain hunting and fishing opportunities through prevention and control of wildlife diseases.

- **Conservation Services Program:** The department's provision of information and technical guidance to hunters, anglers, nonconsumptive wildlife interests, the director and the State Game Commission, and all persons or agencies that manage lands results in the conservation and enhancement of wildlife habitat and recovery of indigenous species of threatened or endangered wildlife.
  - Conserve, enhance, or positively affect an additional 500,000 acres of wildlife habitat statewide.
  - Achieve a commission-approved framework that defines the purposes and policies governing acquisition, management, and use for State Game Commission properties and develop 10 wildlife area-specific management plans.
  - Attain measurable progress toward the restoration of wildlife identified as being at risk of depletion or extinction.
  - Ensure illegal take of threatened or endangered species or subspecies does not impede the prospects for their recovery.
  - Provide an additional 10,000 experience-days of access annually to new year-round appreciative wildlife experiences on at least 10 State Game Commission wildlife areas or other lands and opportunities to participate in specialized New Mexico Department of Game and Fish conservation activities.
  - Ensure all dams on State Game Commission property are deemed safe, operational, and in compliance with Dam Safety Bureau regulations.
- **Wildlife Depredation and Nuisance Abatement Program:** The department's depredation and nuisance complaint administration and intervention processes meet the expectations of private landowners, leaseholders, and other New Mexicans for relief and preclusion from property damage, annoyances, and threats to public safety caused by protected wildlife.
  - Resolve 95 percent of depredation complaints within one year of a problem being reported and verified.
  - Ensure costs associated with depredation prevention and intervention are equitably distributed among all stakeholders.
  - Ensure the department's interventions and public awareness initiatives minimize the potential for harm to people during encounters with dangerous wildlife.
- **Administration Program:** The department's provision of an adequate and flexible system for furnishing direction, oversight, accountability, and support to all divisions results in the attainment of planned outcomes for all department programs.
  - Make decisions within the context of relevant biological, ecological, physical, social, economic, political, and legislative factors organized in spatial relationships.
  - Ensure management and control of the department's financial resources, assets, and procurements complies with applicable laws, regulations, and accounting and procurement standards.

- Attain an expression of 85 percent executive and legislative branch confidence in the department.
- Ensure affected interests rate the department as a knowledgeable and competent manager of the state's wildlife and are 75 percent satisfied with the department's resolution of wildlife management issues.
- Develop a workforce composition in the department that is representative of the diversity of New Mexico's population.
- Ensure at least 50 percent of the public understands and is aware of opportunities to participate in department programs.
- Expand programs to provide an objective, balanced approach to conserving the full array of New Mexico's wildlife species and are provideoutcomes that meet the interests of the broad spectrum of people who seek wildlife-associated recreation and information.
- Ensure 100 percent of the department's work force is equitably and consistently compensated.
- Attain an increase of $1 million in funding derived from federal grants and other partnerships.
- Ensure the department's information technology operations meet CIO-approved information technology plan performance metrics.

The New Mexico State wildlife action plan, titled Comprehensive Wildlife Conservation Strategy for New Mexico, was approved in 2006 and provides the vision for managing New Mexico's fish, wildlife, and wildlife habitats. The plan contains several key elements relevant to Coronado National Forest management:

- **Species of Greatest Conservation Need** – The New Mexico Department of Game and Fish prioritized a list of species for conservation actions aimed at improving conditions for those species through intervention at the population or habitat level. Over 450 species were identified as being vulnerable or the species with the greatest conservation needs.
- **Identification of Key Habitats** – The New Mexico Department of Game and Fish divided the state into 19 key landscape habitat types, including nine terrestrial and ten aquatic habitats. All of these habitats were treated as a habitat in need of conservation.
- **Significant Revelations in New Mexico's Comprehensive Wildlife Conservation Strategy:**
  - New Mexico has 452 vertebrate, mollusc, and arthropod species of greatest conservation need. Significantly larger proportions of amphibians (58 percent) and crustaceans (91 percent) are recognized as species of greatest conservation need than other taxonomic groups.
  - The greatest diversities of terrestrial species of greatest conservation need are predicted to occur in the Apache Highlands, Arizona-New Mexico Mountains, and Chihuahuan Desert Ecoregions.
  - The greatest diversities of aquatic species of greatest conservation need are predicted to occur in the Pecos, Rio Grande, and Gila watersheds.
  - The most significant factors affecting the persistence of species of greatest conservation need statewide are those that cause habitat conversion, loss, and degradation.

- Conversion to other uses, extraction of minerals or water, removal of biological resources, and pollution present the highest probability of altering New Mexico's key habitats.
- Ephemeral natural catchments, perennial marsh/cienega/spring/seeps, and riparian habitats may be at a higher risk of alteration by multiple factors than other habitat types in New Mexico.
- The effects of oil and gas development on species of greatest conservation need and their key habitats are of most concern in the Southern Shortgrass Prairie, Colorado Plateau, and Chihuahuan Desert Ecoregions. Mining poses potential adverse effects in the Arizona-New Mexico Mountains Ecoregion.
- The Chihuahuan Desert, Arizona-New Mexico Mountains, and Southern Shortgrass Prairie Ecoregions have been subjected to significant habitat alterations as the result of off-road vehicle and other recreational uses and military activities.
- Nonnative aquatic species have considerable adverse effects upon native fish, molluscs, and crustaceans in New Mexico's aquatic habitats. However, many nonnative species have been introduced to enhance sport fishing opportunity, and the challenge remains in balancing these interests with maintaining viable and resilient populations of native species.
- Findings to date suggest key areas upon which to focus conservation efforts in New Mexico may include riparian and aquatic habitats throughout the state, areas in the "boot heel" region of southwestern New Mexico extending northward into the Madrean habitats, and areas of the shortgrass prairie and western mountain ranges where they converge with Chihuahuan Desert and Pecos River habitats. These areas contain key habitats, have a high diversity of species of greatest conservation need, are subjected to a moderate to high magnitude of multiple habitat altering factors, and lack legal constraints or long-term management plans protecting them from habitat conversion.
- There is a strong need to fill the information gaps impeding assessment and conservation of New Mexico's biodiversity through the collaborative and coordinated implementation of research, survey, and monitoring projects.
- The highest priority conservation action for both terrestrial and aquatic key habitats statewide is to work with federal, state, and private organizations, research institutions, and universities to design and implement research, survey, and monitoring projects to enhance our understanding of species of greatest conservation need and their key habitats. Knowledge of species of greatest conservation need abundance and distribution and the connectivity and condition of key habitats is of particular interest as are studies that monitor the status of these species and identify and quantify factors limiting their populations.
- New Mexico Department of Game and Fish needs to create partnerships among local, state, federal, and tribal governments, non-government organizations, universities, and individuals to effectively forward our common wildlife conservation interests.
- New Mexico Department of Game and Fish will need to implement conservation strategies that are effective on a landscape scale.
- Perceptions and effectiveness can be greatly enhanced by involving private landowners and the agricultural industry in the comprehensive wildlife conservation strategy implementation, review, and revision phases and otherwise providing them continual

opportunities to inform and influence project development. New Mexico is 51 percent rangeland, 2.4 percent cropland, and 0.3 percent pasture. Even primarily urban Bernalillo County, which includes less than 1 percent of the state's total land area and 30 percent of its population, produces $40 million in agricultural products and has numerous agriculture-related industries.

New Mexico State Land Department

Lands of the New Mexico State Land Office border parcels of the Coronado National Forest in southwestern New Mexico. The Enabling Act of 1910 and the Ferguson Act granted certain lands held by the Federal government to the territory of New Mexico. Under the terms of these land grants, it was stipulated that such lands, totaling 13.4 million acres, were to be held in trust for the benefit of the public schools and other specific beneficiary institutions. The land commissioner is charged with generating and maximizing revenue from state trust lands in order to support public education and other beneficiary institutions, while simultaneously striving to protect, conserve, and maintain the lands so they may be used by future generations. To maximize revenues, the land commissioner generates revenues by leasing lands for grazing, agriculture, commercial use, oil and gas drilling, mining, and other surface and subsurface activities. Management direction for New Mexico State lands is provided by the New Mexico Statewide Natural Resource Assessment (John Romero, Asst. Commissioner, Field Div., pers. comm. w/ Cibola National Forest, July 29, 2011).

Conclusion for State of New Mexico

The Coronado revised forest plan would not conflict with the overall mission or goals of the State of New Mexico, its agencies, or plans.

Federal Agencies

Bureau of Land Management

Portions of Bureau of Land Management lands administered by the Tucson, Safford, and Las Cruces Field Offices are located near, or adjacent to, the sky islands of the Coronado National Forest. Notable Bureau of Land Management areas near the Coronado are a globally significant bird area, the San Pedro Riparian National Conservation Area, and Las Cienegas National Conservation Area. There are numerous wilderness areas, including the world famous Aravaipa Canyon Wilderness. Willcox Playa National Natural Landmark is located between the Pinaleño and Chiricahua Mountains, and Guadalupe Canyon Outstanding Natural Area is just south of the Peloncillo Mountains.

The 1991 Safford Ranger District resource management plan provides guidance to the district in the management of its resources. The plan addresses the following issues: access, area of critical environmental concerns and other types of special management areas, off-highway vehicles, riparian areas, wildlife habitat, lands and realty, outdoor recreation and visual resource management, energy and minerals, cultural resources, soil erosion, vegetation, water resources, air quality, and paleontological resources.

The focus of active management includes riparian improvement treatments, wildlife habitat improvement projects (including prescribed fire and suppression), soil erosion reduction, land

(vegetation manipulation) treatments (including mechanical, chemical, or prescribed fire), and fuelwood cutting. The majority of the public lands are managed to limit off-highway vehicle use to existing roads and trails.

The largest Bureau of Land Management area adjacent or close to the Coronado National Forest is the Las Cienegas National Conservation Area (49,000 acres). The Las Cienegas Resource Management Plan (2002) emphasizes ecosystem management and the use of partnerships and collaboration to achieve desired resource conditions. Livestock grazing is to continue on public land allotments, with grazing operations incorporating variable stocking rates and flexible rotations. Two utility corridors were designated and a corridor for the Arizona Trail. Some roads are being closed or use is being restricted to provide a mix of motorized and nonmotorized recreation, to insure that desired resource conditions are met. Both mechanized and motorized vehicles are restricted to designated routes.

Future BLM Activities

The Bureau of Land Management has several ongoing projects (Aravaipa Ecosystem Management Plan, Proposed SunZia Southwest Transmission Line Project, and Chiricahua FireScape Project) which are near the Coronado National Forest. The Chiricahua FireScape Project planning area includes National Forest System lands on the Coronado National Forest.

Federal Highway Administration

The Forest Highways Program provides funding to resurface, restore, rehabilitate, or reconstruct designated public roads that provide access to or are within a national forest or grassland. The program is administered by the Federal Highway Administration's Federals Lands Highway Office, in partnership with the USDA Forest Service and 41 State departments of transportation, in accordance with tri-agency agreements in each state. Funding is provided for the planning, design, construction, reconstruction, or improvement of designated forest highways—including bridges—that provide access to, or are within, a unit of the National Forest System. Funds can also be used to purchase transit vehicles and design, operate, and maintain public transit facilities on public lands.

Within the Forest Highway Program, the role of the Federal Highway Administration is to provide funding and design, and to act as lead Federal agency for environmental compliance purposes (e.g., National Environmental Policy Act) related to impacts of the Forest Highway Program. The role of the Forest Service is as the owner of the servient estate (underlying land manager) and steward of resources not explicitly related to the forest highway (table 136). The role of other public road agencies (i.e., State department of transportation, county) is as a partner that receives and owns, operates, and maintains the completed highway or highway segment as detailed in the highway easement deed, which they receive from Federal Highway Administration.

A key goal of the Forest Highway Program is to transfer ownership of the highway to a public road agency other than the U.S. Forest Service, when possible. When successful, this program places the operation and maintenance responsibility for the highway with an agency with direct access to U.S. Department of Transportation highway funding so the highway may be maintained to an appropriate standard of safety and efficiency. The Forest Service does not currently have

access to U.S. Department of Transportation funding other than through the transfer methodology of this program.

Table 136. Forest highways located on Coronado National Forest

Forest Highway	Owner By Segment	Road Type	Condition
FH 32 (Chiricahua-Portal)	USFS/.../.../CC	Pvmt/Imp/Nat/Nat	Exc/Good/Poor/Good
FH 34 (Swift Trail)	ADOT	Pvmt/Nat	Fair/Good
FH 36 (Nogales-Palominas)	SCC/USFS	Pvmt/Nat	Failed/Poor
FH 37 (SR-83)	ADOT	Pvmt/Pvmt	Good/Poor
FH 38 (Ruby Road)	USFS/.../SCC/PC	Pvmt/Nat/Pvmt/Pvmt	Failed/Poor/Failed/...
FH 39 (Catalina Hwy)	PC	Paved	Good

Pvmt = Asphaltic Pavement; Imp = Aggregate Surfaced; Nat = Native Surfaced; CC = Cochise County; PC = Pima County; SCC = Santa Cruz County.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service's main role is to administer the Endangered Species Act. Section 7 (a)(1) of the Endangered Species Act directs Federal agencies to aid in conservation of listed species and section 7 (a)(2) requires that agencies, through consultation with the U.S. Fish and Wildlife Service, ensure that their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitat. As projects and activities are planned, forest managers consult with the U.S. Fish and Wildlife Service.

The U.S. Fish and Wildlife Service also issues national polices to promote the conservation and recovery of listed species, including species recovery plans. They are in the process of developing a strategic plan to react to climate change.

The U.S. Fish and Wildlife Service manages the National Wildlife Refuge System. There are two refuges adjacent to the Coronado National Forest: Buenos Aires and Leslie Canyon. The emphasis of management in Buenos Aires National Wildlife Refuge is the reestablishment of a U.S. breeding population of masked bobwhite quail, as well as protecting and improving habitat for other endangered species. Leslie Canyon National Wildlife Refuge protects Yaqui chub and Yaqui topminnow, as well as a rare velvet ash-cottonwood-black willow gallery forest. The Coronado National Forest cooperates closely with the U.S. Fish and Wildlife Service, especially in endangered species protection and fire management activities.

The following are key elements that relate to planning in the draft U.S. Fish and Wildlife Service report "Conserving the Future: Wildlife Refuges and the Next Generation."

- Strategically conserving fish and wildlife
- Delivering fish and wildlife conservation
- Strategic growth
- Protecting wildlife: The role of conservation law enforcement
- Managing wildlife refuges for biological integrity, diversity, and environmental health
- Managing refuges to support ecological resilience and climate adaptation

Issues, concerns, and systemic challenges in managing for biological integrity, diversity, and environmental health identified in the draft report are:

- fire management and emergency preparedness;
- farming;
- water supplies and aquatic ecosystems;
- working beyond wildlife refuge boundaries;
- ocean and marines conservation;
- invasive species;
- wilderness stewardship;
- international connections; and
- comprehensive conservation planning.

National Park Service

The Coronado National Forest shares boundaries with Saguaro National Park, Coronado National Memorial, and Chiricahua National Monument all managed by the National Park Service. The Coronado shares formal, coordinated management responsibilities with the National Park Service for natural resources, wildlife, and fire.

The National Park System of the United States comprises 384 areas covering more than 83 million acres in 49 States, the District of Columbia, American Samoa, Guam, Puerto Rico, Saipan, and the Virgin Islands. These areas are of such national significance as to justify special recognition and protection in accordance with various acts of Congress. National Park Service goals articulated in the National Park Service Strategic Plan (http://planning.nps.gov/policy.cfm) for managing the natural and cultural resources as well as visitor experiences are to:

- preserve park resources;
- provide for the public enjoyment and visitor experience of parks; and
- strengthen and preserve natural and cultural resources, and enhance recreational opportunities managed by partners.

Department of Defense

The Coronado National Forest shares a boundary with the Fort Huachuca Military Reservation. The Coronado and the fort share formal, coordinated management responsibilities for natural resources, wildlife, and fire.

The Department of Defense is steward of an estimated 29 million acres of land in the United States that contains both invaluable cultural and natural resources. In order to support military readiness while preserving the Nation’s natural and cultural heritage, the Department of Defense legacy resource management program was established by Congress in 1990. The goal of the legacy program is to protect, enhance, and conserve natural and cultural resources using the three principles of stewardship, leadership, and partnership. The program is focused on ecosystem management, regional widespread conservation, partnerships, multidisciplinary integrated conservation efforts, and technological implementation.

The legacy program supports 12 areas of emphasis in order to preserve natural and cultural resources:

- Readiness and range sustainment
- Cooperative conservation
- Integrated natural resource management
- Regional ecosystem management initiatives
- National and international initiatives
- Invasive species control
- Monitoring and predicting migratory patterns of birds and animals
- Cultural resource management
- Historic preservation and force protection
- Native American issues
- Curation of archaeological collections, associated records and documents, and management of archaeological sites
- Program management

Conclusion for Federal Agencies

The Coronado revised forest plan would not conflict with the overall mission, plans, or goals of other Federal agencies.

Other Land Owners

The Coronado National Forest borders and surrounds lands of other ownership besides those listed above. There is no known inventory of these landowner's activities and potential impacts to the Coronado.

Conclusion

Overall, the revised forest plan is consistent the missions and goals of other agencies and planning efforts. However, other landowners and land policies or decisions have the potential to impact the Coronado National Forest and vice-versa. In development of the forest plan, these considerations were taken into account. Table 137 and table 138 identify some key potential impacts and describe how the plan deals with those impacts, as well as potential activities on adjacent lands that may impact forest management. No major conflicts with Forest Service planning have been identified at this time.

Table 137. Potential impacts to forest management and relationship to the revised forest plan

Potential Impacts/Issues	How the Revised Forest Plan Addresses
Call for multiple use of the forests	The overall goal of managing National Forest System lands is to sustain the multiple uses of its resources in perpetuity while maintaining the long-term productivity of the land. The plan carries out that goal.
Community growth demand	The plan identifies a management emphasis to work with local communities to understand their community expansion needs and retain access to National Forest System land.
Danger from fire for residents living in a wildland-urban interface	The plan contains goals and objectives for effective treatments that will ensure that fires, when they do occur, are low to moderate severity; and that residents have the information they need to protect themselves and their property from fire and other risks in the wildland-urban interface.
Improve forest health and promote the restoration of forest ecosystems	The desired conditions describe a healthy, sustainable forest, and the objectives identify actions that will help restore ecosystems.
Maintain a healthy, sustainable forest that provides forest products for communities	Desired Condition: A sustainable supply of wood products (e.g., small roundwood, sawlogs, biomass, fuelwood) and other products (e.g., Christmas trees, beargrass, cactus, ferns, and fungi) are provided within the capacity of the land to produce these goods. Silvicultural treatments reflect natural disturbance regimes and contribute to ecosystem sustainability. Forest products, particularly those related to wood fiber, are made available as part of fuel treatment projects and restoration activities.
Support local, traditional custom and culture	The uses of livestock grazing, timber harvesting, mining, and hunting continue to be allowed in the plan. The plan recognizes that many local residents have traditional ties, such as forest product collection, hunting, holiday celebrations, and annual picnics. Ranchers continue to be an important part of the forest history, and their traditional uses remain an important part of the economic and cultural landscape.
Protect private property rights	The plan honors the continuing validity of private, statutory, or pre-existing rights.
Consider local concerns; collaborate with government agencies; consult with tribes	Throughout the plan, there is a management emphasis on collaboration and cooperation with Federal, State, local governments, tribes, and stakeholders.
Growing demand for recreation (trails, designated OHV)	The plan offers a spectrum of recreation settings and opportunities varying from primitive to urban and dispersed to developed, with an emphasis on the natural-appearing character of the forests. Although the plan does not identify specific new developments, it does allow for it if needed. The plan focuses on maintaining existing recreation opportunities and improving their quality.
Tribal use and traditional cultural properties	The plan provides guidance for protecting historic and prehistoric properties and sites, including known American Indian sacred places and traditional cultural properties, and for working with tribes to provide settings for tribal culture and uses.
Conserve, preserve, enhance, and restore wildlife and their habitat	The plan provides guidance for well distributed habitat conditions that contribute to the recovery of federally listed species, and restoring vegetation conditions that support all wildlife.
Minimize impacts from invasive species	The plan provides guidance for controlling or eradicating invasive species.

Potential Impacts/Issues	How the Revised Forest Plan Addresses
Provide opportunities for shooting sports, off-highway vehicles	The plan continues to allow these activities.
Threats related to changes in water availability	The plan provides guidance for protecting all water sources
Threats related to changes in climate	The plan contains information and discussion about climate change and considerations for land management planning.

Table 138. Activities on adjacent lands that may impact forest management

Activity	Management Impact
Land exchanges (changes in ownership)	Wildlife habitat, ecological services, access, scenery management
Sale of Arizona State Lands	Access
Development	Wildlife habitat, ecological services, fire management, scenery management
Mining and quarrying	Wildlife habitat, scenery management
Noxious and invasive weed treatments	Invasive species management, fire management

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Appendix C. Timber Suitability

The National Forest Management Act of 1976 requires that the suitability of National Forest System lands for various uses, including timber production, be identified and documented. National Forest System lands were reserved with the intent of providing goods and services to satisfy public needs over the long term, among which is a sustainable supply of forest products. The 1982 Planning Rule provisions require the responsible official to identify lands not suitable for timber production in the area governed by the forest plan (36 CFR 219.14).

Forest Service Manual 1900 defines “forest land” as that which has at least 10 percent tree cover or which had such tree cover in the past, and which is not currently developed for non-forest uses, such as agriculture, providing improved pasture, residential or administrative areas, improved roads of any width, and adjoining road clearing and power line clearing of any width. It defines timber production as “the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees for cutting into logs, bolts, or other round sections for industrial or consumer use.”

Forest land may be considered as “unsuitable” for timber production if any of the following apply:

a. Congress, the Secretary, or the Chief has withdrawn it from the public domain;

b. it is not producing or capable of producing crops of industrial wood;

c. there is no technology available to prevent irreversible damage to soil productivity and/or watershed conditions;

d. there is no reasonable assurance based on existing technology and knowledge that it is possible to restock lands within 5 years after final harvest, as reflected in current research and experience;

e. there is currently a lack of adequate information about responses to timber management activities; and/or

f. timber management is inconsistent with, or not cost efficient in meeting, the management requirements and multiple-use objectives specified in the forest plan.

Table 139 and table 140 report the results of a timber suitability analysis for the Coronado. In the tables, various categories of forest land are described, and the acres suitable (or unsuitable) for timber production are reported.

Lands having potential commercial-grade timber are located at very high elevations of mountain ranges on four ranger districts. These areas are isolated and difficult to access, making it extremely unlikely for a single processing facility to develop a feasible business model that could incorporate most timbered lands. None of the ranges contains more than 15,000 acres of commercial-grade timber, and most contain much less. Even in each range, timber lands are often separated by major topographic features, have little or no road access, or both.

The most productive lands on the forest are mixed-conifer and spruce-fir forests in the Pinaleño Ecosystem Management Area on the Safford Ranger District. Here, a very large portion of the mixed-conifer community is in federally threatened Mexican spotted owl protected activity centers. The Mexican Spotted Owl Recovery Plan has restrictions on tree size and high-residual

density requirements in Mexican spotted owl protected activity centers; therefore, only narrow avenues of threatened Mexican spotted owl habitat could be managed for timber production. Similarly, the spruce-fir community on the Coronado is concentrated on the top of the Pinaleño Mountains, almost entirely within the federally endangered Mount Graham red squirrel refugium, where there are significant restrictions on residual densities.

Table 139. Timber suitability assessment of Coronado National Forest lands

Category	Description	Acres
Coronado National Forest (total land)	All acreage comprising the forest	1,778,077
Non-forested lands	Non-forested (less than 10 percent occupied by forest trees)	–1,538,340
Lands withdrawn from public domain	Designated wilderness areas, inventoried roadless areas, and private ownership	–180,171
Lands having irretrievable resource damage	Lands having a 40 percent or higher slope and posing a severe erosion hazard	–1,496
Lands where there is no assurance of adequate stocking	General ecosystem survey shows low stocking	–12,413
Lands tentatively suitable for timber production		45,657

Table 140. Timber suitability assessment of Coronado National Forest lands comparing acres among alternatives

Category	Description	No Action	Proposed Action	Alt. 1	Alt. 2
Recommended as wilderness areas	Acres not already subtracted above	0	–55	–1,136	
Not cost efficient in meeting timber production objectives	Located in the Santa Rita, Huachuca, Pinaleño, Santa Catalina, and Chiricahua Ecosystem Management Areas	–40,657	–45,602	–44,520	–45,657
Land suitable for timber production		5,000*	0**	0**	0**
Land not suitable for timber production		1,773,077	1,778,077	1,778,077	1,778,077

*These acres are comprised of ponderosa pine-evergreen shrub and mixed-conifer communities and are located in the Santa Catalina and Chiricahua Ecosystem Management Areas

**Because the Coronado National Forest has zero acres suitable for timber production under the proposed action and alternatives 1 and 2, the long-term sustained yield calculation (LTSYC) and allowable sale quantity (ASQ) are zero as well.

Although management of Pinaleño lands to protect and maintain habitat for the owl and squirrel has supported commercial timber sales and will likely do so again, commercial timber production is expected to be very limited and driven by habitat restoration and protection rather than by commercial timber production. In this area, the Pinaleño Ecosystem Restoration Project, which is in progress, will produce over 10,000 hundred cubic feet of sawtimber and an equal amount of

poletimber. However, treatment costs will far exceed timber value, and as a result, implementation of the project is supported, in part, by a stewardship agreement.

The second largest concentration of timber lands where it is not cost effective to manage for timber production is in the Chiricahua Ecosystem Management Area on the Douglas Ranger District in canyon stringers and near the summit, each requiring individual road systems. Widely-dispersed stands in remote areas make commercial harvesting inefficient. Much of this land is also in Mexican spotted owl protected activity centers or in restricted owl habitat. Commercial timber may be removed at times, although it would be as a secondary or tertiary purpose. Treatment costs here would also exceed any potential value because of costs for hauling long distances. Currently, the closest sawmill is over 160 miles away from the Chiricahua Ecosystem Management Area. Portable milling equipment would be the most viable option for timber production here to provide pallet stock for Mexico's import and export market.

The remaining lands that are not cost effective for timber production are located in the Huachuca, Santa Rita, and Santa Catalina Ecosystem Management Areas. Each is less than 5,000 acres. Commercial-grade timber in these areas is again located in canyon stringers and mountaintops. Often these stands are in Mexican spotted owl protected activity centers or in other restricted habitat. Small commercial sales of timber generated by forest and ecosystem restoration and community wildfire protection projects on the Santa Catalina Ecosystem Management Area may occur during the future life of the revised forest plan, but these would not be conducted with commercial-grade timber harvest as a primary purpose.

Since the 1986 forest plan became effective, three general trends have rendered the once marginally cost-effective timber production activity on the forest as economically infeasible. These are as follows:

1. The small sawmills operating in the 1980s have closed or refocused on other sources of timber. The small Dankworth Sawmill in Graham County no longer exists. Until the mid-1980s, this sawmill processed timber from the Pinaleño Mountains. The larger Western Pine Sawmill in Globe, Arizona also closed in the early 1980s. This mill at one time purchased much of the timber from the Pinaleño Mountains, Pinal Mountains (on the Tonto National Forest), and the San Carlos Indian Reservation. The San Carlos Apache Tribe has since rebuilt this sawmill to process timber from the reservation.
2. Lumber prices have been extremely low over the past 2 decades and are only now beginning to rise, making the overall economic contribution of forest products worse today than in 1986. The historic Summerhaven Sawmill, which closed in the mid-1990s, was the last sawmill operation in the Santa Catalina Mountains.
3. The forest products industry has moved to a more concentrated production model that requires larger processing facilities, production of higher value engineered forest products, and a larger and more concentrated timber resource from which to operate. Projects requiring large capital investments could not be justified in southern Arizona due to the small scale and dispersed nature of the timber resource.

Small, niche, forest products enterprises that would be a good match for the timber resource on the Coronado have not developed at this time. Developing this business model would require a concerted effort from the Forest Service, a role better suited for the Forest Service's State and Private Forestry program, which is not managed by the Coronado. Currently, development of a forest products industry in the Southwest is focused on the forests of northern Arizona and New

Mexico. The Coronado would benefit from a Forest Service program similar to the one in New Mexico, the Collaborative Forest Restoration Program, that supports small community forest utilization projects. Because this program is limited to New Mexico by Congress, expanding this program to Arizona would require a change in statute.

In summary, the acreages listed in table 139 are not cost efficient for timber suitability because one or more of the following conditions apply: (1) small acreages of a highly dispersed timber resource; (2) limitations on harvesting related to habitat requirements and species protection restrictions for the federally listed Mexican spotted owl and the Mount Graham red squirrel; (3) long transport distances to timber processing facilities that are not economical; (4) a loss of industry and specialized skills required to harvest and process timber, or some combination of these things.

Appendix D. Crosswalk of Desert and Grassland Communities with Ecological Site Descriptions

The ecological site descriptions in table 141 and table 142 were used to develop desired conditions related to the plant composition and structure of the related vegetation communities.

Table 141. Crosswalk of desert and grassland communities with ecological site descriptions for each mountain range in Santa Catalina, Nogales, and Sierra Vista ranger districts

Land Unit (MLRA)	**Santa Catalina**		**Nogales**			**Sierra Vista**		
Desert (40-1)	**Catalina**	**Rincon**	**Atascosa**	**Santa Rita**	**Tumacacori**	**Huachuca**	**Whetstone**	**Patagonia**
Acid igneous hills and pediment	x	x						
Loamy slopes	x							
Limy slopes	x							
Sandy wash	x	x						
Desert grasslands (41-3)	**Catalina**	**Rincon**	**Atascosa**	**Santa Rita**	**Tumacacori**	**Huachuca**	**Whetstone**	**Patagonia**
Acid igneous hills	x	x		x	x	x	x	x
Basic igneous hills			x	x	x			x
Limestone hills	x	x		x		x	x	x
Acid igneous pediment	x	x		x	x	x	x	x
Loamy slopes	x	x	x	x	x		x	x
Limy slopes	x	x	x	x	x		x	x
Sandy wash	x	x	x	x	x		x	x
Plains grassland and savanna (41-1)	**Catalina**	**Rincon**	**Atascosa**	**Santa Rita**	**Tumacacori**	**Huachuca**	**Whetstone**	**Patagonia**
Acid igneous hills	x	x		x	x	x	x	x
Basic igneous hills and pediment			x	x	x	x		x
Limestone hills	x	x		x		x	x	x
Acid igneous pediment	x	x		x	x	x	x	
Loamy slopes	x	x	x	x	x	x	x	x
Limy slopes	x	x	x	x	x	x	x	x
Loamy upland	x		x	x	x	x	x	
Limy upland			x	x	x	x	x	
Sandy wash	x	x	x	x	x	x	x	x
Loamy bottomland			x	x	x	x		x

Table 142. Crosswalk of desert and grassland communities with ecological site descriptions for each mountain range in Douglas and Safford ranger districts

Land Unit (MLRA)	**Douglas**			**Safford**			
Desert (40-1)	**Peloncillo**	**Dragoon**	**Chiricahua**	**Pinaleño**	**Santa Teresa**	**Galiuro**	**Ecological Site Description Number as in ESIS**
Acid igneous hills and pediment							R040XA105AZ and R040XA121AZ
Loamy slopes							R040XA109AZ
Limy slopes							R040XA110AZ
Sandy wash							R040XA115AZ
Desert grasslands (41-3)	**Peloncillo**	**Dragoon**	**Chiricahua**	**Pinaleño**	**Santa Teresa**	**Galiuro**	
Acid igneous hills		x	x	x	x		R041XC306AZ
Basic igneous hills	x		x			x	R041XC323AZ and R041XC330AZ
Limestone hills	x	x	x				R041XC307AZ
Acid igneous pediment		x	x	x	x		R041XC322AZ
Loamy slopes	x	x	x	x	x	x	R041XC314AZ
Limy slopes	x	x	x	x	x	x	R041XC308AZ
Sandy wash		x		x		x	R041XC316AZ
Plains grassland and savanna (41-1)	**Peloncillo**	**Dragoon**	**Chiricahua**	**Pinaleño**	**Santa Teresa**	**Galiuro**	
Acid igneous hills		x	x	x	x		R041XA102AZ
Basic igneous hills and pediment	x		x			x	R041XA111AZ
Limestone hills	x	x	x				R041XA103AZ
Acid igneous pediment		x	x	x	x		R041XA117AZ
Loamy slopes	x	x	x	x	x	x	R041XA107AZ
Limy slopes	x	x	x	x	x	x	R041XA104AZ
Loamy upland	x	x	x	x		x	R041XA108AZ
Limy upland	x	x	x			x	R041XA105AZ
Sandy wash	x	x	x	x	x	x	F041XA112AZ
Loamy bottomland	x	x	x			x	R041XA114AZ

Appendix E. Range Suitability and Capability

Determination of Lands Suitable and Capable for Livestock Grazing on the Coronado National Forest

Introduction

Procedures in the 1982 Planning Rule require that the suitability and capability of National Forest System lands for producing forage for grazing animals be determined in forest planning. Suitability is the appropriateness of applying certain resource management practices to a particular area of land in consideration of the relevant social, economic, and ecological factors. Capability is the potential of an area of land to produce resources and supply goods and services. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils, and geology.

Suitability should be determined based on compatibility with desired conditions and objectives in the plan area. The responsible official shall not identify lands within the plan area as suitable for a certain use if that use is prohibited by law, regulation, or policy; would result in substantial and permanent impairment of the productivity of the land or renewable resources; or if the use is incompatible with the desired conditions for the relevant portion of the plan area. A designation of an area as suitable for a particular use does not mean that the use will occur over the entire area. Likewise, a determination that a particular use is not suitable in a management area does not mean that the use will not occur in specific areas. The identification of an area as suitable for various uses is guidance for project and activity decision making, and is not a resource commitment or final decision approving projects and activities. Final decisions on resource commitments are made at the project level. The final decision to authorize livestock grazing would be made at a project (allotment) level.

Capability

The capability of Coronado National Forest lands to produce forage for grazing animals was determined in the 1980s for the 1986 forest plan. Landscape-scale conditions that determine capability (such as landform, geology, slope, climate) have not changed significantly since the first evaluation, therefore, capability determined in the original is still applicable. Cyclical or temporal fluctuations in climatic conditions such as El Niño cycles or drought periods are not cause for reanalyzing capability, but are considered by Coronado National Forest personnel when making project-level grazing decisions and responded to through adaptive management. Current climate conditions and trends have not been shown to be outside of historical norms for the Southwest. What has changed since the original analysis is the availability of more accurate data and analysis tools. Capability for this plan was reassessed using corporate GIS data.

The Coronado National Forest constrains capability of lands for producing forage for livestock based on slope (less than 40 percent) and forage productivity (more than 100 pounds per acre per year). Forage productivity is not currently mapped at a scale fine enough to detect areas with less

than 100 pounds per acre per year and, so, capability is identified and mapped using slope as the sole criteria. However, lands with slopes greater than 40 percent are intermingled throughout grazing allotments and livestock will intermittently use these lands as they pass through them while traveling to other capable portions of the allotments. This intermittent use may, and often does, contribute in a limited way to the forage base for domestic livestock. The results of the analysis are displayed in table 143.

Table 143. Grazing capability calculations for the Coronado National Forest

Grazing Capability Analysis	Acres
Gross area of the Coronado National Forest	1,789,934
Slopes greater than 40 percent	719,999
Lands tentatively capable for livestock grazing	1,063,935

Suitability

The Coronado National Forest has been managing grazing allotments since the forest was established, and more intensively managing them for the past 20 years. This experience is of great value when determining where grazing should and should not occur on the Coronado National Forest. Existing suitable and nonsuitable use identification in the 1986 forest plan is the starting point for identifying suitability of land use in the revised forest plan. Suitability for livestock grazing in the 1986 forest plan was determined following the procedures of the 1982 Planning Rule. Subsequent to publication of the 1986 plan, site-specific analysis of individual grazing allotments under the National Environmental Policy Act has been an ongoing process. This process ensures that livestock grazing is consistent with desired conditions and objectives for a particular management area or geographic area within a planning unit.

According to Southwestern Region guidance for determining suitability and capability for livestock grazing (USDA 2010), the scale of the suitability identification should be the same as the desired condition and objective descriptions. These may be management areas, land use zones, or ecological management areas. Although allotment level data is used in aggregate to determine landscape level suitability, identification of plan level suitability is not appropriate at the allotment scale.

The following is the process used for completing the review of lands currently identified as suitable for livestock grazing, and for adjusting suitability determinations in the revised forest plan.

1. **Review of lands suitable for livestock grazing in the 1986 forest plan.** Management areas in the 1986 forest plan were, for the most part, delineated by the capability of lands to produce natural resources such as livestock forage and fuelwood, provide recreation settings, or emphasize unique biological resources. The 1986 forest plan identifies lands in Management Areas 2, 3, 4, 7, 9, 14 and part of 15 as suitable for livestock grazing. All lands in Management Areas 1, 2A, 2B, 3A, 3B, 8, and 8A are identified as not suitable for livestock grazing.
2. **Review of site-specific assessments to determine need for change.** Compatibility with desired conditions is the basis for determining whether or not livestock grazing is suitable for a particular area. During the need for change analysis, comparisons between existing

conditions and desired conditions were made. Through a review of site-specific National Environmental Policy Act assessments for each individual grazing allotment it was determined that current identification of areas suitable for livestock grazing is not precluding the ability to manage those areas to achieve desired conditions, as evidenced by allotment-level decisions to continue to authorize grazing. This review confirmed that livestock grazing is suitable in areas where it is currently authorized.

3. **Alignment of livestock grazing suitability with proposed management areas.** Management areas in the proposed plan, alternative 1, and alternative 2 are different than in the 1986 forest plan. The proposed management areas are fundamentally based on social experiences, with the exception of research natural areas and zoological-botanical areas which emphasize unique biological resources. Review of steps 1 and 2 confirmed livestock grazing in designated grazing allotments is a suitable use. To align grazing suitability with the proposed plan and action alternatives, areas currently authorized for livestock grazing or where grazing is allowed in establishment records were intersected with the proposed management areas.

The following management areas would be suitable in the proposed plan and action alternatives:

- motorized recreation
- roaded backcountry
- wild backcountry
- wilderness areas
- recommended wilderness areas
- wilderness study areas
- Cave Creek Canyon Birds Of Prey Zoological-Botanical Area
- South Fork of Cave Creek Zoological-Botanical Area
- Wild Chile Botanical Area
- Guadalupe Canyon Zoological-Botanical Area
- Appleton-Whittell Research Ranch
- Arizona National Scenic Trail

Management areas identified as not suitable for livestock grazing in the proposed plan and action alternatives are the following:

- developed recreation
- Elgin Research Natural Area
- Goudy Canyon Research Natural Area
- Canelo Research Natural Area
- Santa Catalina Research Natural Area
- Butterfly Research Natural Area
- proposed Finger Rock Research Natural Area
- Wet Canyon Talussnail Zoological-Botanical Area
- Mount Graham Astrophysical and Biological Research Area
- Pole Bridge Research Natural Area and proposed extension
- Goodding Research Natural Area and proposed extension

Table 144 identifies areas of the forest unsuitable for livestock grazing. The total area identified varies slightly by alternative due to changes in acreage of the developed recreation management area. Of the approximately 1,063,935 acres identified as tentatively capable for livestock grazing,

approximately 47,000 (see table 144 for exact acreages by alternative) acres were identified as not suitable due to incompatibility with desired conditions.

Table 144. Acres of management areas unsuitable for grazing on the Coronado National Forest by alternative

Management Area	Proposed Action	Alternative 1	Alternative 2
Developed Recreation*	36,774	35,495	36,294
Elgin Research Natural Area	245	245	245
Goudy Canyon Research Natural Area and proposed extension	558	558	558
Canelo Research Natural Area	386	386	386
Santa Catalina Research Natural Area	634	634	634
Butterfly Research Natural Area	1,058	1,058	1,058
Proposed Finger Rock Research Natural Area*	1,103	1,103	1,103
Wet Canyon Talussnail Area	1,218	1,218	1,218
Mount Graham Astrophysical and Biological Research Area	2,937	2,937	2,937
Pole Bridge Research Natural Area and proposed extension	582	582	582
Goodding Research Natural Area and proposed extension	2,213	2,213	2,213
Total area of management areas determined to be unsuitable for livestock grazing	47,708	46,429	47,228
Tentatively capable lands that are not suitable for livestock grazing due to incompatibility with desired conditions.	31,730	30,763	31,251

* Livestock grazing is generally not suitable in the Developed Recreation Land Use Zone except for approximately 12,206 acres within existing designated livestock grazing allotments.

Grazing allotments occur mostly in the grassland and Madrean encinal woodland vegetation communities. These two communities occupy approximately 66.7 percent or just over 1.1 million acres of the Coronado. These community's current vegetative condition class has been identified in the "2009 Coronado National Forest Ecological Sustainability Report" (USDA FS 2009b). The vegetative condition class identifies the degree to which they differ from reference conditions (departure). Grasslands have a vegetative condition class of 3 or highly departed from reference conditions, while the Maderan encinal woodlands have a vegetative condition class of 2 or a low to moderate departed from reference conditions.

The grassland community contains more invasive plants such as Lehmann lovegrass (*Eragrostis lehmanniana*) and weeping lovegrass (*Eragrostis curvula*) than any other community on the forest. In many areas, Lehmann lovegrass is now naturalized and forms monocultures that likely prevent the return of native grasses (Anable et al. 1992). Eradication may be possible with repeated application of herbicides, but the cost and negative effects of large-scale herbicide treatments make eradication impractical. There would also be a high likelihood of re-invasion of

treated sites, considering that large seed sources exist on adjacent ownerships. Although less desirable than native grasses for some species of wildlife, including seed-foraging rodents and birds (Bock et al. 1986), Lehmann lovegrass does fulfill the purposes for which it was initially seeded to protect soil from erosion and provide forage for livestock. Unlike situations where vegetation type conversion occurs due to the invasion of a nonnative species (e.g., conversion of a grassland to a shrubland), in areas where Lehmann lovegrass has become dominant, grassland ecosystem function, as a whole, has been maintained.

Currently, 27 percent of grasslands on the Coronado exist in an open native condition, 52 percent are shrub invaded, and 21 percent are open nonnative grasslands. Of the shrub-invaded areas, 42 percent have the potential to be restored to an open native condition. Sixty-nine percent of grasslands on the Coronado are either in the open native or restorable native communities, with the remainder in nonnative or former grassland communities (USDA FS 2009b). The revised plan defines desired conditions based on the reference conditions for grassland communities and provides management objectives and guidelines that would provide a framework for implementing site-specific projects to achieve desired conditions. These plan components would guide management through planned and unplanned ignitions and mechanical treatments on at least 72,500 acres every 10 years (7,250 acres per year) to maintain open, native grasslands with appropriate shrub and overstory cover.

Vegetation mapping indicates that currently, the Madrean encinal woodland is characterized by a diversity of structural stages; however, there is an overabundance of the late-seral and lack of mid-seral closed state when compared to the desired conditions of 0 percent for this class. Closed states generally have decreased grass and forb cover when compared to open canopy states. The revised plan defines desired conditions based on reference conditions for the Madrean encinal woodland and provides management objectives and guidelines as a framework for implementing site-specific projects to achieve these conditions. These forest plan components would guide management through an increase of wildfire treatments to treat 367,000 acres every 10 years to open tree and shrub canopies and promote understory grasses and forbs.

Summary

In summary, the plan level determination of suitability for livestock grazing differs between the 1986 plan and the action alternatives because of differences in the criteria used for identification of management areas.

Appendix F. Supplemental Information for Wildlife and Rare Plants Analysis

Table 145. Key for associated habitat and ecosystem management area codes in wildlife and rare plants tables

Status
E = endangered
T = threatened
C = candidate
P = proposed
Ex = experimental/nonessential
NW = listing not warranted
D = delisted
PR = petitioned for relisting
SS = Forest Service sensitive species (Southwestern Region)
O = forest planning species or other status
MIS = management indicator species

Known or Likely Occurrences on Forest by Ecosystem Management Area
1 = Peloncillo
2 = Chiricahua
3 = Dragoon
4 = Tumacacori
5 = Santa Rita
6 = Huachuca
7 = Whetstone
8 = Pinaleño
9 = Winchester
10 = Galiuro
11 = Santa Teresa
12 = Santa Catalina

Associated Habitat*
A = Riparian
B = Spring
C = Lotic
D = Lentic
E = Cliff/rock
F = Terrestrial
G = Cave
H = Other
1 = Desert Communities
2 = Valley Grasslands
3 = Interior Chaparral
4 = Madrean Encinal/PJ
5 = Madrean Pine-Oak
6 = Ponderosa Pine
7 = Mixed-Conifer Forest
8 = Subalpine Forest
9 = Montane Meadow

* Alpha characters correspond to physical habitat components, while numerals correspond to biotic habitat components, based on potential natural vegetation types.

All Forest Planning Species on the Coronado National Forest

Table 146 shows all species that were considered in the coarse- and fine-filter analyses for species viability. See the key above (table 145) for letter and number code interpretations.

Table 146. Wildlife and plant species considered in the analysis

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Mammals					
Jaguar	*Panthera onca*	E	AF45	1, 2, 4, 5, 6, 7	F
Mount Graham red squirrel	*Tamiasciurus hudsonicus grahamensis*	E, MIS	F78	8	F
Ocelot	*Leopardus pardalis*	E	AF23456	1, 2, 4, 5, 6, 7	F
Lesser long-nosed bat	*Leptonycteris yerbabuenae*	E	FG1234	1 thru 12	F
Mexican long-nosed bat	*Leptonycteris nivalis*	E	FG23456	1	F
Mexican gray wolf	*Canis lupus baileyi*	E, Ep	F45678	Extirpated	C
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	SS	E1-5	4, 5, 10, 12	C
Big free-tailed bat	*Nyctinomops macrotis*	O	AEG12	2	C
Mule deer	*Odocoileus hemionus*	O	F1-4	1 thru 12	C
White-tailed deer	*Odocoileus virginanus*	O	F2-9	1 thru 12	C
[Desert] bighorn sheep	*Ovis canadensis [mexicana]*	SS	AE12	10, 12	F
Mesquite (Merriam's) mouse	*Peromyscus merriami*	SS	AF1-2	4, 5, 6, 12	C
Mountain lion	*Puma concolor*	O	F2-7	1 thru 12	C
Fulvous harvest mouse	*Reithrodontomys fulvescens*	SS	F2-4	1, 4, 5, 6, 7	C
Plains harvest mouse	*Reithrodontomys montanus*	SS	F2-4	3, 5, 6, 7	C
Arizona gray squirrel	*Sciurus arizonensis*	O	A4-7	4, 5, 6, 12	C
Chiricahua [fox] squirrel	*Sciurus nayaritensis chiricahuae*	SS	AF56	2	C
Yellow-nosed cotton rat	*Sigmodon ochrognathus*	SS	F4-9	2, 4, 5, 6, 12	C
Arizona shrew	*Sorex arizonae*	SS	BC4-7	1, 2, 5, 6	C
Botta's [Graham Mountains] pocket gopher	*Thomomys bottae [includes grahamensis]*	SS	F1-9	1 thru 12	C

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Southern pocket gopher [includes Huachuca and Pajarito endemic forms]	*Thomomys umbrinus [includes intermedius* and *quercinus]*	SS	F45	4, 5, 6	C
Black bear	*Ursus americanus*	O	F2-9	1 thru 12	C
Pronghorn antelope	*Antilocapra americana*	O	F2	1 thru 12	C
Northern pygmy mouse	*Baiomys taylori [ater]*	SS	F2	1, 2, 4, 5, 6	C
Mexican long-tongued bat	*Choeronycteris mexicana*	SS	AFG45	1, 2, 3, 4, 5, 6, 7, 12	F
[Pale] Townsend's big-eared bat	*Plecotus townsendii [pallescens]*	SS	FG1234567	1 thru 12	F
[Greater] western mastiff bat	*Eumops perotis [californicus]*	SS	AEF12	2 thru 12	C
Allen's big-eared bat	*Idionycteris phyllotis*	SS	AEG4567	2, 8, 10	C
Western red bat	*Lasiurus blossevillii*	SS	AF24567	1, 2, 4, 5, 6, 7, 8, 10	C
Western yellow bat	*Lasiurus xanthinus*	SS	AF12345	1, 2, 4, 12	C
White-sided jackrabbit	*Lepus callotis*	SS	FH2	1 (maybe)	C
California leaf-nosed bat	*Macrotus californicus*	SS	EFG1	4, 5, 10, 12	C
Hooded skunk	*Mephitis macroura milleri*	SS	AEF1-7	1-12	C
White-bellied [long-tailed] vole	*Microtus longicaudus leucophaeus*	SS	F7-9	8	C
White-nosed coati	*Nasua narica*	SS	AF2,4-6	2, 4, 6, 8	C
Cockrum's gray shrew	*Notiosorex cockrumi*	SS	AF24	2, 3, 4, 5, 6, 7	C
Birds					
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	A		F
Masked bobwhite	*Colinus virginianus ridgewayi*	E	F2	4	F
Mountain plover	*Charadrius montanus*	NW	F4?	Unknown	F
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	T	A124	1 thru12	F
Mexican spotted owl	*Strix occidentalis lucida*	T, MIS	F567	1 thru 12	F
Bald eagle	*Haliaeetus leucocephalus*	T, D, SS	riverine, lacustrine	1 thru 12	C
American peregrine falcon	*Falco peregrinus anatum*	D, SS	E1-7	1 thru 12	F
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	D, PR, SS	A1	5, 6, 12	C
Northern Aplomado falcon	*Falco femoralis septentrionalis*	Ex	F2	1, 2	F

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Northern goshawk	*Accipiter gentilis*	SS	F4-7	1 thru 12	F
Violet-crowned hummingbird	*Amazilia violiceps*	SS	A145	1, 2, 5, 6	C
Baird's sparrow	*Ammodramus bairdii*	SS	F2	1 to 12, but spotty and mostly in valleys below Forest	C
Arizona grasshopper sparrow	*Ammodramus savannarum ammolegus*	SS	F2	1, 2, 4, 5, 6,	C
Northern gray hawk	*Asturina (=Buteo) nitida maximus*	SS	A1-4	1, 4, 6	C
Common black-hawk	*Buteogallus anthracinus*	SS	A1-2,6-8	6, 8, 12	C
Lucifer hummingbird	*Calothorax lucifer*	SS	F12	1, 2, 6, 7	C
Northern beardless tyrannulet	*Camptostoma imberbe*	SS	A1-4	1, 4, 5, 6, 8, 10, 12	C
Buff-collared nightjar	*Caprimulgus ridgwayi*	SS	AEF12	1, 4, 12	C
Broad-billed hummingbird	*Cynanthus latirostris*	SS	A1-5	1-12	C
Montezuma quail	*Cyrtonyx montezumae*		F245	1, 2, 4, 5	C
Northern buff-breasted flycatcher	*Empidonax fulvifrons pygmaeus*	SS	F5	1, 2, 5, 6, 12	C
Eared quetzal	*Euptilotis neoxenus*	SS	F56	1, 2	C
White-eared hummingbird	*Hylocharis leucotis*	SS	A5-7	2, 6, 8	C
Wild turkey	*Meleagris gallopavo*	SS	AF4-8	1, 2, 4, 5, 6, 8, 10, 12	C
Whiskered screech owl	*Otus trichopsis*	SS	AF45	1, 2, 4, 5, 7, 10	C
Rose-throated becard	*Pachyramphus aglaiae*	SS	A124	4, 6	C
Varied bunting	*Passerina versicolor*	SS	AF12	1, 2, 4, 5, 6,	C
Band-tailed pigeon	*Patagioenas fasciata*	O	F4-8	1 thru 12	C
Abert's towhee	*Pipilo aberti*	SS	A12	1-12 (mostly in deserts below forest)	C
Black-capped gnatcatcher	*Polioptilla nigriceps*	O	A124	4, 5, 6	C
Elegant trogon	*Trogon elegans*	O	A45	1, 2, 4, 5, 6	C
Thick-billed kingbird	*Tyrannus crassirostris*	SS	A12	1, 2, 4, 6, 12	C
Amphibians					
Sonora tiger salamander	*Ambystoma mavortium stebbinsi*	E	AD2	6	F
Chiricahua leopard frog	*Lithobates chiricahuensis*	T	ACD245	1, 2, 3, 4, 5, 6, 10	F

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Arizona treefrog (Huachuca/Canelo distint population segment)	*Hyla wrightorum*	NW	AE45	6	F
Tarahumara frog	*Lithobates tarahumarae*	SS	ACD24	5	C
Western barking frog	*Craugastor augusti cactorum*	SS	E245	4, 5, 6	C
Lowland leopard frog	*Lithobates yavapaiensis*	SS	ACD12	4, 10, 11, 12	F
Plains leopard frog	*Lithobates blairi*	SS	ACDF245	Formerly 2	C
Great Plains narrow-mouthed toad	*Gastrophryne olivacea*	SS	ACDF1245	4, 5, 6, 12	C
Reptiles					
New Mexico ridge-nosed rattlesnake	*Crotalus willardi obscurus*	T	AEF345	1	F
Northern Mexican gartersnake	*Thamnophis eques megalops*	T	A234	4, 5, 6	F
Arizona striped whiptail	*Aspidoscelis arizonae*	O (90-DAY)	F2	8? 9? 10?	C
Red-backed whiptail	*Aspidoscelis xanthonota*	O	F1	4?	C
Bezy's night lizard	*Xantusia bezyi*	O	E134	10?	C
Giant spotted whiptail	*Aspidoscelis burti stictogramma*	SS	AF124	1, 4, 5, 6, 8, 9, 10, 11, 12	F
Twin-spotted rattlesnake	*Crotalus pricei*	SS	E678	2, 5, 6, 8	C
Arizona ridge-nosed rattlesnake	*Crotalus w. willardi*	SS	AF459	5, 6, 7	C
Sonoran Desert tortoise	*Gopherus morafkai*	NW	F12	4, 10, 12	C
Thornscrub hook-nosed snake	*Gyalopion quadrangulare*	SS	F124	4	C
Sonoran mud turtle	*Kinosternon sonoriense*	O, MIS	CDF245	1 thru 12	C
Slevin's bunchgrass lizard	*Sceloporus slevini*	SS	AF56	1, 2, 3, 5, 6, 7	C
Chihuahuan black-headed snake	*Tantilla wilcoxi*	O	F567	4, 5, 6	C
Yaqui black-headed snake	*Tantilla yaquia*	SS	AF1245	1, 2, 4	C
Desert box turtle	*Terrepene ornata luteola*	O	F2	1 thru 12	C
Brown vinesnake	*Oxybelis aeneus*	SS	F24	4	C
Green ratsnake	*Senticolis triaspis*	SS	A4	1, 2, 4, 6	C
Mountain skink	*Plestiodon callicephalus*	SS	AEF45	1, 4, 6	C
Gila monster	*Heloderma suspectum*	SS	AF12	1 thru 12	C

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Fish					
Gila chub	*Gila intermedia*	E	C12	12	F
Yaqui chub	*Gila purpurea*	E	C24	2	F
Yaqui catfish	*Ictalurus pricei*	E	C2	2	F
Gila topminnow	*Poeciliopsis occidentalis*	E	C124	6	F
Sonora chub	*Gila ditaenia*	T	C24	4	C
Desert pupfish	*Cyprinodon macularius*	E	C12		F
Spikedace	*Meda fulgida*	E	C		F
Loach Minnow	*Tiaroga cobitis*	E	C		F
Gila trout	*Oncorhynchus gilae*	T	C5678	8	F
Apache trout	*Oncorhynchus gilae apachae*	T	C5678	8	F
Roundtail Chub	*Gila robusta*	P	C		F
Mexican stoneroller	*Campostoma ornatum*	SS	C245	2	F
Sonora sucker	*Catostomus insignis*	SS	C24	4, 5	F
Longfin dace	*Agosia chrysogaster*	SS	C1-4	2, 4, 5, 6, 12 (from D Mitchell, pers comm., 1/24/07)	C
Desert sucker	*Catostomus clarkii*	SS	C24	5, 10	F
Speckled dace	*Rhinichthys osculus*	O	C124	6, 7, 10	C
Insects					
Stephan's riffle beetle	*Heterelmis stephani*	Extinct	BC4	5	F
Sunrise skipper	*Adopaeoides prittwitzi*	O	D	5, 6	C
Persephone's darner	*Aeshna persephone*	O	C5	2, 6 (at least)	C
Huachuca giant-skipper	*Agathymus evansi*	SS	F45	6	F
False Ameletus mayfly	*Ameletus falsus*	O	CF9	2, 12	C
Sabino dancer	*Argia sabino*	O? SS?	C124	4, 12	C
A Notodontid moth	*Astylis biedermani*	O	F24	2, 6	C
Patagonia eyed silkmoth	*Automeris patagoniensis*	O	F45	2, 6	C
A caddisfly	*Chimarra primula*	O	C45	2	C
Maricopa tiger beetle	*Cicindela oregona maricopa*	O	A1-5	1, 2, 8, 11	C
A mayfly	*Cloeodes peninsulus*	O	C4-7	2	C
Ball's monkey grasshopper	*Eumorsea balli*	O	F3	6	C
Pinaleño monkey grasshopper	*Eumorsea pinaleno*	SS	F8	8	C

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Red whiskers grasshopper	*Melanoplus desultorius*	O	F2	1 thru 12	C
A spur-throat grasshopper	*Melanoplus pinaleno*	O	F79	8	C
A caddisfly	*Nectopsyche dorsalis*	O	C2-5	4	C
A Notodontid moth	*Oligocentria delicata*	O	F45	2, 3, 5, 6	C
Arizona snaketail	*Ophiogomphus arizonicus*	SS	AC6	6 +	C
Desert shadowdamsel	*Palaemnema domina*	O	AC12	10	C
Four-spotted skipperling	*Piruna polingii*	SS	AF1-7,9	2, 6	C
Arizona water penny beetle	*Psephenus arizonensis*	O	C45	2	C
Bluish fritillary	*Speyeria nokomis coerulescens*	O	AB567	5, 6, 12	C
A royal moth	*Sphingicampa raspa*	O	F4	5, 6,	C
A sphinx moth	*Sphinx smithi*	O	F4	6	C
Spot-winged meadowhawk	*Sympetrum signiferum*	O	AC45	2, 6	C
A stonefly	*Taenionema jacobii*	O	AC12	12	C
A lichen moth	*Agylla septentrionalis*	O	unknown	unknown	C
A tiger moth	*Alexicles aspersa*	O	unknown	unknown	C
Montane giant tiger beetle	*Amblycheila baroni*	O	FE4	"most"	C
A stonefly	*Amphinemura apache*	O	BC-unknown	2	C
A stonefly	*Amphinemura venusta*	O	BC-unknown	unknown	C
Pima dancer	*Argia pima*	O	BC-unknown	unknown	C
Sonoran banded-skipper	*Autochton pseudocellus*	O	A4	formerly 2, 6	C
Atascosa gem grasshopper	*Aztecacris gloriosus*	O	F2	4	C
An underwing moth	*Catocala frederici*	O	unknown	Cochise Co.	C
A caddisfly	*Chimarra adella*	O	unknown	unknown	C
Glittering tiger beetle	*Cicindela fulgoris erronea*	O	unknown	unknown	C
Horn’s tiger beetle	*Cicindela hornii*	O	F2	unknown	C
Nevada tiger beetle	*Cicindela nevadica citata*	O	unknown	unknown	C
A Notodontid moth	*Cisthene coronado*	O	AF45	4, 5	C
A grasshopper	*Conalcaea cantralli*	O	unknown	unknown	C
A caddisfly	*Culoptila moselyi*	O	AB678	2	C

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Arizona Cymbiodytan water scavenger beetle	*Cymbiodyta arizonica*	SS	ABCD-unknown	2	F
Mayan setwing	*Dythemis maya*	O	unknown	unknown	C
Claw-tipped bluet	*Enallagma semicirculare*	O	unknown	unknown	C
A tiger moth	*Grammia allectans*	O	unknown	unknown	C
Stone's buckmoth	*Hemileuca stonei*	O	F4	most area of SE EMAs	C
A Notodontid moth	*Heterocampa amanda*	O	F5	4, 6	C
A Notodontid moth	*Heterocampa incongrua*	O	F4	unknown	C
Colorado hairstreak	*Hypaurotis crysalus intermedia*	O	F67	2, 5, 6, 8, 12 and more at spp level	C
A lichen moth	*Inopsis funerea*	O	unknown	Cochise Co.	C
A caddisfly	*Lepidostoma acarolum*	O	unknown	unknown	C
Lichen grasshopper	*Leuronotina ritensis*	O	FE5	Prob 5, 12	C
Bleached skimmer	*Libellula composita*	O	unknown	unknown	C
A caddisfly	*Limnephilus granti*	O	AC	8	C
A spur-throat grasshopper	*Melanoplus chiricahuae*	O	F6-9	2	C
A spur-throat grasshopper	*Melanoplus magdalenae*	O	F6-9	2	C
Sabino stonefly	*Mesocapnia werneri*	O	unknown	presumably 12	C
A caddisfly	*Metrichia arizonensis*	O	unknown	unknown	C
A caddisfly	*Micrasema arizonica*	O	unknown	unknown	C
Antioch potter wasp	*Microdynerus arenicolus*	O	unknown	unknown	C
A caddisfly	*Ochrotrichia argentea*	O	unknown	unknown	C
A caddisfly	*Ochrotrichia rothi*	O	unknown	unknown	C
A caddisfly	*Ochrotrichia spinulata*	O	unknown	unknown	C
Alberta Arctic	*Oeneis alberta daura*	O	unknown	8 (unless a mistake)	C
A caddisfly	*Polycentropus gertschi*	O	unknown	unknown	C
Snow's toothpick grasshopper	*Prorocorypha snowi*	O	unknown	5	C
Terloo's sphinx	*Proserpinus terlooii*	O	F24	Not sure: Cochise, Santa Cruz, and Pima Cos	C
A tiger moth	*Pygarctia neomexicana*	O	unknown	SE AZ	C
A tiger moth	*Sonorarctia fervida*	O	unknown	Cochise Co.	C
A caddisfly	*Tinodes parvulus*	O	unknown	unknown	C

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Cestus skipper	*Atrytonopsis cestus*	SS	AEF(1)24	4, 5, 10, 12	C
Monarch butterfly	*Danaus plexippus*	O	most	1 thru 12, but especially Canelo Hills during migration	C
Other Invertebrates					
A cave obligate pseudoscorpion	*Chitrellina chiricahuae*	O	G4	2	C
Arizona cave amphipod	*Stygobromus arizonensis*	O	CG4	2, 5, 6	F
A cave obligate pseudoscorpion	*Tuberochernes ubicki*	O	G4	5	C
A cave obligate spider	*Thymoites minero*	O	unknown	unknown	C
Mollusks					
Huachuca springsnail	*Pyrgulopsis thompsoni*	NW,SS	BD245	6	F
Angulate woodlandsnail	*Ashmunella angulata*	O	EF456	2	C
Cave Creek woodlandsnail	*Ashmunella chiricahuana*	O	EF67	2	C
Barfoot [“Bearfoot”] woodlandsnail	*Ashmunella esuritor*	O	EF56	2	F
Reed’s Mountain woodlandsnail	*Ashmunella ferrissi*	O	EF45	2	C
Horseshoe Canyon woodlandsnail	*Ashmunella lenticula*	O	EF45	2	C
Whitetail woodlandsnail	*Ashmunella lepiderma*	O	EF45	2	C
Huachuca woodlandsnail	*Ashmunella levettei*	O	EF4567	6	C
Chiricahua woodlandsnail	*Ashmunella proxima*	O	AE234567	2	F
Miller Canyon woodlandsnail	*Ashmunella varicifera*	O	EF4567	6	C
Shortneck snaggletooth	*Gastrocopta dalliana*	O	ABEFH1234567	2, 3, 4, 5, 6, 7, 8, 10, 12	C
Sonoran snaggletooth	*Gastrocopta prototypus*	O	F245	2, 3, 6	C
Cross snaggletooth	*Gastrocopta quadridens*	O	F789	2, 6, 8, 12	C
Arizona Holospira	*Holospira arizonensis*	O	EF45	2	C
Cave Creek Holospira	*Holospira chiricahuana*	O	EF45	2	C
Stocky Holospira	*Holospira ferrissi*	O	ACEF1245	2, 3, 6	C
Silver Creek Holospira	*Holospira sherbrookei*	O	E2	2	C

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Teasing Holospira	*Holospira tantalus*	O	EF245	3	C
Whetstone Holospira	*Holospira whetstonensis*	O	F245	7	C
Santa Rita rabdotus	*Naesiotus christenseni*	O	unknown	5	C
Bearded mountainsnail	*Oreohelix barbata*	SS	E4567	2	C
Huachuca mountainsnail	*Oreohelix concentrata*	O	E234567	3, 6, 7, 12	C
Pinaleño mountainsnail	*Oreohelix grahamensis*	SS	EF67	8	F
Arizona mantleslug	*Pallifera pilsbryi*	O	F67	12	C
Cayuse Physa	*Physella osculans*	O	“aquatic”	unknown	C
Chiricahua mountainsnail	*Radiocentrum chiricahuana*	O	AE456	2	C
Cave Creek mountainsnail	*Radiocentrum clappi*	O	E456	2	C
Ribbed pinwheel	*Radiodiscus millecostatus*	O	ABFG456789	2, 3, 6, 12	C
Apache talus snail	*Sonorella apache*	O	E45	3	C
Rincon talus snail	*Sonorella bagnarai*	O	F7	12	C
Happy Valley talus snail	*Sonorella bequaerti*	O	F2345	12 (if any)	C
Horsehoe Canyon talus snail	*Sonorella binneyi*	O	F245	2	C
Quartzite Hill talus snail	*Sonorella bowiensis*	O	F45	2 (if any)	C
Blue talus snail	*Sonorella caeruliflumini*s	O	F24	unknown	C
Clark Peak talus snail	*Sonorella christenseni*	SS	E67	8	C
Madera talus snail	*Sonorella clappi*	O	AEF456	5	C
Garden Canyon talus snail	*Sonorella dalli*	O	AF45	6	C
Bear Canyon talus snail	*Sonorella danielsi*	O	F45	6	C
Stronghold Canyon talus snail	*Sonorella dragoonensis*	O	EF4	3	C
Dragoon talus snail	*Sonorella ferrissi*	O	E45	3	C
Galiuro talus snail	*Sonorella galiurensis*	O	E124	10 (if any)	C
Pinaleño talus snail	*Sonorella grahamensis*	SS	EF567	8	C
Peloncillo talus snail	*Sonorella hachitana peloncillensis*	SS	EF4567	1	C
Mimic talus snail	*Sonorella imitator*	SS	EF78	8	C
Whetsone talus snail	*Sonorella insignis*	O	EF45	7	C
Wet Canyon talus snail	*Sonorella macrophallus*	SS	AEF567	8	F

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Sonoran talus snail	*Sonorella magdalenensis*	O	EF245	4, 5	C
Pygmy Sonorella	*Sonorella micra*	O	E5	2	C
Portal talus snail	*Sonorella neglecta*	O	F4	2	C
Pungent talus snail	*Sonorella odorata*	O	EF567	12	F
Big Emigrant talus snail	*Sonorella optata*	O	E45	2	C
Posta Quemada talus snail	*Sonorella rinconensis*	O	assume rock association	12	C
Rosemont talus snail	*Sonorella rosemontensis*	O	E4	5	C
Sanford talus snail	*Sonorella tryoniana*	O	AEF24	5	C
Chiricahua talus snail	*Sonorella virilis*	O	E4567	2	C
Heart Vertigo	*Vertigo hinkleyi*	O	F456	6	F
Fungi-Lichen					
No common name	*Heterodermia appalachensis*	O	EF45	2, 5	C
Rugose skin lichen	*Leptogium rugosum*	O	EF45	2, 5	C
No common name	*Omphalora arizonica*	O	F7	5	C
No common name	*Xanthoparmelia ajoensis*	O	AF124	5	C
No common name	*Xanthoparmelia dissensa*	O	E24	2, 5, 8, 12	C
No common name	*Xanthoparmelia huachucensis*	O	E24	4, 5, 6	C
No common name	*Xanthoparmelia nigropsomifera*	O	E2	4, 12	C
Mosses-Liverworts					
Ehrenberg's barbula moss	*Barbula ehrenbergii (=Barbula bolleana)*	O	unknown	unknown	C
No common name	*Mannia californica*	O	AE45	4, 12	F
No common name	*Plagiochasma wrightii*	O	AE4	2, 4	F
Agoyan cataract moss	*Scopelophila cataractae*	O	unknown	unknown	C
No common name	*Tayloria splachnoides*	O	unknown	unknown	C
Plants					
Canelo Hills ladies'tresses	*Spiranthes delitescens*	E	RIP, SPG: GRA, ENC	HUA	F
Pima pineapple cactus	*Coryphantha scheeri* var. *robustispina*	E	F12	5, 6	F
Huachuca water umbel	*Lilaeopsis schaffneriana* var. *recurva*	E	ABD1245	6	F
Lemmon's fleabane	*Erigeron lemmonii*	NW	ROC: PIO	HUA	F

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Parish's Abutilon	*Abutilon parishii*	SS	AE12	4, 5, 12	F
Milfoil acacia	*Acacia millefolia*	O	F234	2, 3, 5, 7, 9, 12	C
Thread-leaf giant-hyssop	*Agastache rupestris*	O	F4	4, 5, 10	C
Santa Cruz striped agave	*Agave parviflora* ssp. *parviflora*	SS	F24	4, 5, 6	C
Trelease agave	*Agave schottii* var. *treleasei*	SS	F234	12	C
Toumey agave	*Agave toumeyana*	O	F1-5	8	C
Goodding's onion	*Allium gooddingii*	SS	F78	12	C
Redflower onion	*Allium rhizomatum (=glandulosum)*	O	AF245	2, 6	C
Santa Rita yellowshow	*Amoreuxia gonzalezii*	SS	EF2	5	F
Arizona slimpod	*Amsonia grandiflora*	SS	F4	4, 6	C
False indian-mallow	*Anoda abutiloides*	O	F1-4	4, 5, 12	C
Cliff brittlebush	*Apacheria chiricahuensis*	O	E5	2, 3	C
Rincon Mountain rockcress	*Arabis tricornuta*	SS	F5-79	2, 5, 6, 12	C
Southwestern white pine dwarf-mistletoe	*Arceuthobium blumeri*	O	Parasitic on SW White Pine; F7	2, 8, 10, 11, 12	C
Western spruce dwarf-mistletoe	*Arceuthobium microcarpum*	O	Parasitic on spruce; F8	8	C
Lemmon milkweed	*Asclepias lemmonii*	SS	F45, disturbed	2, 5, 6	C
Greene's milkweed	*Asclepias uncialis* ssp. *uncialis*	SS	F259; disturbed areas	6	C
Halfmoon milk-vetch	*Astragalus allochrous* var. *playanus*	O	F259	1 thru 12	C
Copper Mine milk-vetch	*Astragalus cobrensis* var. *maguirei*	SS	A45	1, 2	F
Huachuca milk-vetch	*Astragalus hypoxylus*	SS	F4	6	F
Ashen milk-vetch	*Astragalus tephrodes* var. *brachylobus*	O	unklnown	8	C
Windham's scale cloak-fern	*Astrolepis windhamii*	O	F234	2, 3, 4, 6, 12	C
Ayenia	*Ayenia truncata (= A. glabra)*	SS	F12	5	F
Tucson Mountain spiderling	*Boerhavia megaptera*	O	F12	12?	C
Wright's bluestem	*Bothriochloa wrightii*	O	F45	6	C
Santa Rita gramma	*Bouteloua eludens*	O	F2	4, 5, 12	C
Parry's gramma	*Bouteloua parryi*	O	F2	1, 2, 3, 7, 9, 5, 12	C

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Rothrock's gramma	*Bouteloua rothrockii*	O	F2	1 thru 12	C
Resin-leaved brickell-bush	*Brickellia baccharidea*	O	EF1-4	2, 4, 5, 6, 1 2	C
Lemmon's beggar-ticks	*Brickellia lemmonii* var. *lemmonii*	O	F6	1, 2	C
Mt. Davis brickell-bush	*Brickellia parvula*	O	AE6	12	C
Sonoran brickell-bush	*Brickellia simplex*	O	F4-6	1, 2, 6	C
Arizona brome	*Bromus mucroglumis*	O	AEF??	2, 5, 6, 12	C
Elusive browallia	*Browallia eludens*	SS	AF45	6	F
Arizona bluehearts	*Buchnera arizonica*	O	A4	4	C
Chiltepin	*Capsicum annuum* var. *glabriusculum*	SS	AF24	2, 4	C
Chihuahuan sedge	*Carex chihuahuensis*	SS	AD5-7,9	2, 5, 6, 8, 12	F
Cochise sedge	*Carex ultra*	SS	AB45	1, 2, 3, 4, 5, 6, 10	F
Trans-Pecos indian paintbrush	*Castilleja nervata*	SS	F456	2, 5, 12	C
Graceful lip fern	*Cheilanthes yavapensis*	O	A124	5, 8, 10, 12	C
Soft Mexican-orange	*Choisya dumosa* var. *mollis*	SS	F45	4	F
Rose-color thistle	*Cirsium rothrockii*	O	F4-6	2, 3, 6, 8	C
Mexican hemlock-parsley	*Conioselinum mexicanum*	SS	F67	5, 6	C
Recurved corycactus	*Coryphantha recurvata*	SS	F234	4	F
Smooth baby-bonnets	*Coursetia glabella*	SS	F45	2, 6	F
Pointed cat's-eye	*Cryptantha muricata* var. *denticulata*	O	AF5	8	C
Los pinitos dodder	*Cuscuta dentatasquamata*	O	unknown	5	C
Cochise dodder	*Cuscuta mitriformis*	O	A6	2	C
Santa Rita dodder	*Cuscuta odontolepis*	O	unknown	2	C
Narrow-leaf (Wiggins) swallow-wort	*Cynanchum wigginsii (=Metastelma mexicanum)*	SS	F4	4, 6, 12	C
Gentry's indigobush	*Dalea tentaculoides*	SS	A45	4	C
Oakwoods prairie-clover	*Dalea versicolor* var. *sessilis*	O	F1-4	1, 2, 3, 4, 5, 6, 8, 12	C
Chiricahua Mountains larkspur	*Delphinium andesicola*	O	F67	2, 6, 8, 12	C
Rocky Mountain larkspur	*Delphinium scopulorum*	O	A5	2, 5	C

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Metcalfe's tick-trefoil	*Desmodium metcalfei*	SS	AF245	4, 5, 6	C
Heller's whitlow-grass	*Draba helleriana* var. *bifurcata*	O	E78	2, 8, 12	C
Rock whitlow-grass	*Draba petrophila* var. *viridis*	O	E4-7	(6, 12) 1 thru 12	C
Standley's whitlow-grass	*Draba standleyi*	O	E4-8	2	C
Pinewood drymary	*Drymaria effusa* var. *effusa*	O	F56	2, 4, 5, 6, 8, 12	C
Arid throne fleabane	*Erigeron arisolius*	SS	F24	2, 3, 4, 5, 6, 9	F
Arizona fleabane	*Erigeron arizonicus*	O	EF4-8	2, 6	C
Heliograph Peak fleabane	*Erigeron heliographis*	SS	E78	8	C
Chiricahua fleabane	*Erigeron kuschei*	SS	E67	2	C
Pringle's fleabane	*Erigeron pringlei*	O	AE7	5, 8	F
Winn Falls fleabane	*Erigeron scopulinus*	O	E6-8	2	C
Arizona wild-buckwheat	*Eriogonum arizonicum*	O	F1; disturbed areas	1, 2, 3, 7, 8, 9, 10, 11	C
Arizona eryngo	*Eryngium sparganophyllum*	O	A456	5, 12	F
Orcutt's foxtail cactus	*Escobaria orcuttii*	O	E12	1, 2	C
Bisbee's pincushion cactus	*Escobaria vivipara* var. *bisbeeana*	O	F2	1, 2, 4, 5, 6, 7, 11, 12	C
Bigelow's thoroughwort	*Eupatorium bigelovii*	O	AE7	8	F
Goodding's ash	*Fraxinus gooddingii*	O	F24	4	C
Chihuahua ash	*Fraxinus papillosa*	O	F45	1, 2, 3, 4, 5, 6	C
Wright's milkpea	*Galactia wrightii* var. *mollissima*		unknown	8	C
Chiricahua gentian	*Gentianella wislizeni*	SS	F679	2	F
Chiricahua vervain	*Glandularia chiricahensis*	O	F6-9	2, 6	C
Bartram's stonecrop	*Graptopetalum bartramii*	SS	EF45	2, 3, 4, 5, 12	C
Chihuahuan stickseed	*Hackelia ursina*	O	F56	2, 5, 8, 10, 12	C
Ribbed mock pennyroyal	*Hedeoma costatum*	O	E5, disturbed	2	C
Arizona false pennyroyal	*Hedeoma dentata*	O	EF6; disturbed	1 thru 12	C
Santa Catalina burstwort	*Hermannia pauciflora*	O	EF1	12	F
Rutter's golden-aster	*Heterotheca rutteri*	SS	disturbed;F24	4, 5, 6	C

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Chiricahua Mountain alumroot	*Heuchera glomerulata*	SS	AB24567	2, 8, 10, 12	C
Coral-bells	*Heuchera sanguinea*	O	unknown	2, 5, 12	C
Crested coralroot	*Hexalectris arizonica*	SS	F2456	2, 3, 4, 5, 6, 7, 9, 12	C
Coleman's coralroot	*Hexalectris colemanii*	SS	A24	5	F
Purple-spike coralroot	*Hexalectris warnockii*	SS	F45	2, 6	F
Lemmon's hawkweed	*Hieracium lemmonii*	O	AF67	2, 5, 6, 12	C
Rusby's hawkweed	*Hieracium rusbyi*	SS	F7	2, 6, 8, 12	C
Pinaleño Mountains rubberweed	*Hymenoxys ambigens* var. *ambigens*	O	F4	8, 11	C
Pinaleño Mountains rubberweed	*Hymenoxys ambigens* var. *floribunda*	O	F4,5,6	2, 3	C
New Mexico bitterweed	*Hymenoxys ambigens* var. *neomexicana*	SS	F4	1	C
Rincon bitterweed	*Hymenoxys quinquesquamata*	O	F5	2, 5, 6, 12	C
California satintail	*Imperata brevifolia*	O	AB1-4	12	C
Huachuca Mountain morning-glory	*Ipomoea plummerae* var. *cuneifolia*	O	F9	2, 4, 5, 6	C
Lemmon's morning-glory	*Ipomoea tenuiloba* var. *lemmonii*	O	F1-4	2, 4, 5, 6	C
Thurber's morning-glory	*Ipomoea thurberi*	O	F24	2, 4, 5, 6	C
Cochise woolwort	*Laennecia eriophylla*	O	F24	4, 5, 6	C
White Mountain bladderpod	*Lesquerella pinetorum*	O	F2-4	2, 8, 11	C
Lemon lily	*Lilium parryi*	SS	A678	2, 5, 6	C
Chiricahua mudwort	*Limosella pubiflora*	SS	BC4-7	1, 2	F
Arizona gromwell	*Lithospermum confine*	O	unknown	2	C
Sonoran trefoil	*Lotus alamosanus*	SS	AB4	4	C
Huachuca Mountain lupine	*Lupinus huachucanus*	SS	F4, disturbed	2, 5, 6	C
Lemmon's lupine	*Lupinus lemmonii*	SS	F6	3, 5, 12	C
New Mexico lupine	*Lupinus neomexicanus*	O	F4-8, disturbed	2, 8, 12	C
Giant-trumpets	*Macromeria viridiflora*	O	F6	2, 5, 6, 7, 12	C
Stebbins desert-dandelion	*Malacothrix stebbinsii*	O	F12	5, 12	C
Graham nipple cactus	*Mammillaria grahamii* var. *oliviae*	O	F12	2, 4, 5, 6	C

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Little nipple cactus	*Mammillaria heyderi* var. *bullingtoniana (=aplanata)*	O	F124	1	C
Little nipple cactus	*Mammillaria heyderi* var. *macdougalii*	O	F1-4	3, 4, 5, 7, 12	C
Arizona manihot	*Manihot davisiae*	SS	F12	5, 12	C
Netted globeberry	*Margaranthus solanaceus (=lemmonii)*	O	F124	2, 3, 5, 6, 8, 12	C
Spreading marina	*Marina diffusa*	O	F5	6	C
Balbis (=Huachuca milkweed vine)	*Matelea (=Pherotrichis) balbisii*	O	F45	6	C
Southwest monkeyflower	*Mimulus dentilobus*	O	AB24	5	F
Bamboo muhly	*Muhlenbergia dumosa*	O	F124	4, 12	C
Sycamore muhly	*Muhlenbergia elongata (=M. xerophila)*	SS	AEF45	4, 5, 12	C
Southwestern muhly	*Muhlenbergia palmeri (=M. dubioides)*	SS	AF1-4	4, 5, 6, 12	C
Arizona yellowhood	*Nissolia wislizeni*	O	F2	6	C
Gray's cloakfern	*Notholaena grayi ssp. sonorensis*	O	E1-4	1thru 12	C
Lemmon's cloak-fern	*Notholaena lemmonii*	O	E234	4, 12	C
Texas false-garlic	*Nothoscordum texanum*	O	F24	6, 12	C
New Mexico prickly-pear	*Opuntia phaeacantha* var. *laevis*	O	EF124	4, 5, 12	C
Toumey groundsel	*Packera neomexicana* var. *toumeyi*	SS	F567	2, 6, 12	C
Virlet's paspalum	*Paspalum virletii*	SS	F24	4, 5	C
Foetid passionflower	*Passiflora foetida (assume* var. *arizonica)*	SS	F12	4	C
Beardless chinch weed	*Pectis imberbis*	SS	F24, disturbed	5, 6	F
Three-leaved cliffbrake	*Pellaea ternifolia* ssp. *arizonica*	O	E5	3, 6	C
Mt. Graham beardtongue	*Penstemon deaveri*	O	F6-9	8	C
Catalina beardtongue	*Penstemon discolor*	SS	E456	4, 9, 10, 11, 12	C
Superb beardtongue	*Penstemon superbus*	O	AF12	1, 3, 5, 6, 11, 12	C
Western gold fern	*Pentagramma triangularis* ssp. *maxonii*	O	F1-5	4, 6, 12	C
Cochise rock daisy	*Perityle cochisensis*	SS	E456	2	C

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Slimlobe rock daisy	*Perityle dissecta*	O	E124	1, 2, 3, 5, 7, 8, 9, 10, 11, 12	C
Supine bean	*Phaseolus supinus (=Maroptilium supinum)*	SS	F24	2, 4, 5, 6, 12	C
Santa Catalina Mountains phlox	*Phlox tenuifolia*	O	F1-4	10, 12	C
Rough mistletoe	*Phoradendron bolleanum* ssp. *pauciflorum*	O	F2-6, parasitic on ABCO, esp	2, 3, 4, 5, 6, 7, 9, 12	C
Broad-leaf ground-cherry	*Physalis latiphysa*	SS	F12	8	F
No common name	*Pinaropappus roseus* var. *foliosus*	O	F69	2, 6, 12	C
Pringle's popcorn-flower	*Plagiobothrys pringlei*	O	F12	2, 3, 5, 7, 9, 12	C
Leafy Jacob's-ladder	*Polemonium foliosissimum* var. *flavum*	O	F67	8	F
Hinkley's Jacob's ladder	*Polemonium pauciflorum hinckleyi*	SS	AE678	2	F
White-flowered cinquefoil	*Potentilla albiflora*	SS	F6-9	8	F
Chiricahua cinquefoil	*Potentilla rhyolitica* var. *chiricahuensis*	SS	E7	2	C
Huachuca cinquefoil	*Potentilla rhyolitica* var. *rhyolitica*	SS	E7	5, 6	F
Navajo cinquefoil	*Potentilla subviscosa* var. *subviscosa*	O	F67	1 thru 12	C
Thurber's cinquefoil	*Potentilla thurberi* var. *atrorubens*	O	AF679	8	C
Thurber's cinquefoil	*Potentilla thurberi* var. *thurberi*	O	AF679	2, 12	C
Wheeler's cinquefoil	*Potentilla wheeleri*	O	F789	6	C
Gentry's bare-ray-aster	*Psilactis gentryi*	SS	AF5679	6	C
Whisk fern	*Psilotum nudum*	SS	AF1	4	F
Frogbit buttercup	*Ranunculus hydrocharoides* var. *stolonifer*	O	ABD6	2, 6	C
Redberry buckthorn	*Rhamnus crocea* ssp. *pilosa*	O	F1-4	2, 3, 5, 7, 9, 12	C

Common Name	Scientific Name	Status	Associated Habitat	Ecosystem Management Area	Coarse or Fine Filter
Seemann (Hartweg's) groundsel	*Roldana hartwegii (=Senecio hartwegii*, with syn = *S. seemannii, S. carlomasonii*, and *R. carlomasonii)*	O	AF4-7	2, 4, 5, 6	C
Blumer's dock	*Rumex orthoneurus*	SS	AB789	2, 6, 8	C
Catalina Mountain sage	*Salvia amissa*	SS	A124	9, 10, 12	C
Chiricahua Mountain brookweed	*Samolus vagans*	SS	AB45	2, 4, 5, 6, 12	C
Huachuca Mountains skullcap	*Scutellaria tessellata*	O	F24	2, 3, 4, 5, 6, 7, 9, 12	C
Huachuca groundsel	*Senecio multidentatus* var. *huachucanus*	SS	EF567	2, 5, 6	C
Long-flower tubetongue	*Siphonoglossa longiflora*	O	F12	12	C
Arizona blue-eyed-grass	*Sisyrinchium arizonicum*	O	F679	2, 6, 12	C
Nodding blue-eyed grass	*Sisyrinchium cernuum*	SS	AB1245	2, 4, 5, 12	C
Timberland blue-eye-grass	*Sisyrinchium longipes*	O	BF678	2, 8, 12	C
Arizona necklace	*Sophora arizonica*	O	F124	7, 8	C
Porsild's starwort	*Stellaria porsildii*	SS	F79	2	F
Lemmon's stevia	*Stevia lemmonii*	SS	AEF56	5, 6, 12	C
Pinos Altos Mountains flameflower	*Talinum humile*	SS	F24	1, 6	C
Tepic flameflower	*Talinum marginatum*	SS	E456	6	C
Aravaipa woodfern	*Thelypteris puberula* var. *sonorensis*	SS	ABE12	12	F
Sonoran noseburn	*Tragia laciniata*	SS	AF56	4, 5, 6	C
Cusp clover	*Trifolium mucronatum* ssp. *lacerum*	O	AB4	6	C
Tumamoc globe-berry	*Tumamoca macdougalii*	SS	F1	12	C
Arizona limestone rosewood	*Vauquelinia californica* ssp. *pauciflora*	O	E24	1	C
Sunflower golden-eye	*Viguiera dentata* var. *lancifolia*	O	F1-6	4, 5, 6, 12	C
Ponderosa violet	*Viola umbraticola*	SS	A5	5, 6, 12	C
Cochise woodsia	*Woodsia cochisensis*	O	BE245	2, 3, 4, 5, 6	F
Phillips' cliff fern	*Woodsia phillipsii*	O	AE5	2, 6, 12	C

Table 147. Key for table 148

Section	Subsection	Plan Section Title
ARP		Animals and Rare Plants
BIP		Biophysical Features
EMA	CAT	Santa Catalina Ecosystem Management Area
EMA	CHI	Chiricahua Ecosystem Management Area
EMA	DRA	Dragoon Ecosystem Management Area
EMA	HUA	Huachuca Ecosystem Management Area
EMA	PEL	Pelancillo Ecosystem Management Area
EMA	PIN	Pinaleño Ecosystem Management Area
EMA	RIT	Santa Rita Ecosystem Management Area
EMA	TUM	Tumacacori Ecosystem Management Area
ISM		Invasive Species Management
LOA	OPS	Land Ownership and Adjustment
MIN		Minerals
MTS		Motorized Transportation
NWS		Natural Water Sources
RAM		Range Management
REC		Recreation
RIA		Riparian Communities
VIC		Vegetation - Interior Chaparral
VMP		Vegetation - Madrean Pine-Oak
VWM		Vegetation - Wet Mixed-Conifer
WET		Wetlands
WIL	PSR	Pusch Ridge Wilderness

Table 148. Codes for plan components used in the species viability analysis

(G=guideline, S = standard, O = objective, MA = management approach)

Section	Subsection	Component	No.	Plan Component Language
ARP		G	1	Activities occurring within federally listed species habitat should apply habitat management objectives and species protection measures from approved recovery plans.
ARP		G	2	Where the Forest Service has entered into signed conservation agreements that provide guidance on activities or actions to be carried out by national forest staff, those activities or actions should be undertaken consistent with the guidance found within those conservation agreements.
ARP		G	3A	A minimum of three goshawk nest areas and three replacement nest areas should be located per goshawk territory. Goshawk nest and replacement nest areas should generally be located in drainages, at the base of slopes, and on northerly (NW to NE) aspects. Nest areas should generally be 25 to 30 acres in size.

Section	Subsection	Component	No.	Plan Component Language
ARP		G	3B	Goshawk post-fledging areas (PFAs) of approximately 420 acres in size should be designated surrounding the nest sites.
ARP		G	3C	In goshawk foraging areas and PFAs, groups of three to five reserve trees should be retained within management-created openings greater than 1 acre in ponderosa pine-evergreen shrub and dry mixed-conifer communities, and six reserve trees should be retained within management-created openings greater than 0.5 acre in wet mixed-conifer and spruce-fir communities.
ARP		G	3D	In occupied goshawk nest areas, human presence should be minimized between March 1 and September 30.
ARP		G	4	Active raptor nests on cliff faces should be protected from disturbance during the nesting season.
ARP		G	6	Identified bat roosts should be protected from disturbance during periods of bat occupancy. During nonoccupancy periods, activities should not modify biophysical features that contribute to roost habitat quality or contribute to the spread of diseases harmful to bats unless unavoidable in order to meet statutory requirements, such as mining law or laws to protect public health and safety.
BIP		G	1	Talus slopes should not be altered and materials should not be removed from them. In areas that harbor talussnails, vegetation treatments should be designed to retain microhabitat characteristics for endemic snails and other talus-dependent species unless as needed to meet statutory requirements, such as mining law or laws to protect public health and safety.
BIP		G	2	Management activities should be designed to avoid or minimize the alteration of naturally occurring rocky outcroppings or cliff faces.
BIP		G	5	Identified bat roosts should be managed to provide for the enhancement and protection of bat populations. Protection measures may include seasonal closures, public education, and wildlife-friendly gates.
EMA	CAT	G	1	During vegetation treatments, mesic microenvironments for woodland and talus snails endemic to the Santa Catalina EMA should be protected (e.g., trees near rocky features, islands of shrubs within talus slopes, riparian colluvia, large logs, scattered rocks on shady hillsides).

Section	Subsection	Component	No.	Plan Component Language
EMA	CAT	G	2	Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to rare or unique vertebrate, invertebrate and plant populations. For the Santa Catalina Ecosystem Management Area, these species include, but are not limited to: • Aravaipa woodfern • Arizona eryngo • Arizona manihot • Rusby's hawkweed
EMA	CHI	G	2	During vegetation treatments, considerations of mesic microenvironments for woodland and talus snails endemic to the Chiricahua EMA should be incorporated (e.g., trees near rocky features, islands of shrubs within talus slopes, riparian colluvia, large logs, scattered rocks on shady hillsides).
EMA	CHI	G	3	Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Chiricahua Ecosystem Management Area, these species include, but are not limited to: • Chiricahua fleabane • Chiricahua gentian • copper mine milk-vetch • Hinkley's Jacob's ladder • Porsild's starwort • purple-spike coralroot • Rusby's hawkweed • smooth baby-bonnets
EMA	CHI	S	2A	Within South Fork of Cave Creek Zoological-Botanical Area: A special use permit is required for any plant or animal collection.
EMA	CHI	S	2B	Within South Fork of Cave Creek Zoological-Botanical Area and the proposed Cave Creek Canyon Birds of Prey Zoological-Botanical Area: A special use permit is required for scientific research that would involve placing anything on National Forest System lands within the proposed zoological-botanical area.
EMA	DRA	G	3	Management activities involving ground disturbance and/or vegetation management should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Dragoon Ecosystem Management Area, these species include, but are not limited to: Coleman's coral-root and Purple-spike coral-root.

Section	Subsection	Component	No.	Plan Component Language
EMA	HUA	G	1	In aquatic habitats occupied by Arizona treefrog, water levels should be maintained or enhanced during breeding season to a level adequate to support reproduction.
EMA	HUA	G	2	Impacts from management actions such as grazing, vegetation treatments, and recreation should be mitigated within Arizona treefrog habitat.
EMA	HUA	G	3	During vegetation treatments, mesic microenvironments for woodland and talus snails endemic to the Huachuca EMA should be protected (e.g., trees near rocky features, islands of shrubs within talus slopes, riparian colluvia, large logs, scattered rocks on shady hillsides).
EMA	HUA	G	4	Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to rare or unique vertebrate, invertebrate and plant populations. For the Huachuca Ecosystem Management Area, these species include, but are not limited to: • beardless chinch weed • Cochise woolwort • elusive browallia • Huachuca cinquefoil • Huachuca milkvetch • Huachuca water umbel • Pima pineapple cactus • purple-spike coralroot • Rusby's hawkweed • smooth baby-bonnets
EMA	PEL	G	2	Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Peloncillo Ecosystem Management Area, these species include, but are not limited to: • Chiricahua mudwort • Copper mine milk-vetch • New Mexico bitterweed
EMA	PIN	MA	1	Considering mesic microenvironments for woodland and talussnails endemic to the Pinaleño Ecosystem Management Area (such as trees near rocky features, islands of shrubs within talus slopes, riparian colluvia, large logs, scattered rocks on shady hillsides) when doing vegetation treatments.

Section	Subsection	Component	No.	Plan Component Language
EMA	PIN	G	1	Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Pinaleño Ecosystem Management Area, these species include, but are not limited to: • broad-leaf ground-cherry • leafy Jacob's ladder • Rusby's hawkweed • white-flowered cinquefoil
EMA	PIN	G	3A	Within habitat for Mount Graham red squirrel (MGRS) red squirrel habitat needs should supersede the needs of all other species of plants and animals.
EMA	PIN	G	3B	Within habitat for Mount Graham red squirrel, hiking use levels should not negatively impact MGRS habitat or individuals.
EMA	PIN	G	3C	Within habitat for Mount Graham red squirrel, vegetation treatments should be designed and implemented to avoid disturbance of MGRS middens.
EMA	PIN	O	1	Every 10 years, treat the vegetation using wildland fire (planned and unplanned ignitions), prescribed cutting, and mastication on at least 25 percent of the Pinaleño Ecosystem Management Area to create resiliency to disturbances. Treatments will be consistent with the objectives for forestwide vegetation communities and resources.
EMA	PIN	S	2	Within habitat for the Mount Graham red squirrel, no new recreational residence or developed recreation areas will be established.
EMA	RIT	G	2	Management activities involving ground disturbance, vegetation management, or both should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Santa Rita Ecosystem Management Area, these species include, but are not limited to: • Arizona eryngo • Arizona Manihot • Ayenia • beardless chinch weed • Chisos Coralroot • Cochise woolwort • Huachuca cinquefoil • Pima pineapple cactus • purple-spike coral-root • Santa Rita yellowshow • Southwest monkeyflower

Section	Subsection	Component	No.	Plan Component Language
EMA	RIT	O	1	Every 10 years, treat the vegetation using wildland fire (planned and unplanned ignitions), prescribed cutting, and mastication on at least 20 percent of the Santa Rita Ecosystem Management Area to create resiliency to disturbances. Treatments will be consistent with the objectives for forestwide vegetation communities and resources.
EMA	TUM	G	2	In rocky stream areas where large granitic boulders occur, projects should be designed to minimize or avoid impact to *Mannia californica* and *Plagiochasma wrightii* habitat.
EMA	TUM	G	3	Within the Wild Chile Botanical Area: a. Planned and unplanned ignitions should be used seasonally prior to wild chile flowering and fruiting. b. Livestock grazing should be deferred during the growing season of wild chiles, approximately August to November. c. Wild chile plants should be protected when high-severity fire threatens the population.
EMA	TUM	G	4	Management activities involving ground disturbance and/or vegetation management should incorporate site-specific design features to benefit habitat for, or mitigate impacts to, rare or unique vertebrate, invertebrate and plant populations. For the Tumacacori Ecosystem Management Area, these species include, but are not limited to, the following: • Cochise woolwort • recurved corycactus • soft Mexican-orange • whisk fern
ISM		G	1	Habitat improvement and aquatic restoration projects within or adjacent to water sources occupied by ranid frogs, northern Mexican gartersnake, Sonora tiger salamanders, or native fish should include provisions to remove nonnative invasive animals.
LOA	OPS	MA-Open Space	1	Working with willing landowners, communities, local governments, and partners to promote voluntary open space conservation. Participating in local planning efforts regarding development or use of non-Federal lands as an information provider to help promote appropriate open space, access and recreation opportunities as well as to reduce ecological impacts and wildfire risks for communities.
MIN		G	1	Talus slopes should not be used as a common variety mineral materials source where disturbance would destabilize the talus slopes and alter any endemic or rare species habitat or presence.

Section	Subsection	Component	No.	Plan Component Language
MIN		G	2	Mine reclamation should use a geomorphic approach that results in landforms similar to adjacent natural terrain and hydrologic functions similar to natural systems to minimize long-term monitoring and maintenance requirements.
MTS		G	2	New road construction in meadows and wetlands should be avoided where physically or financially feasible. If these activities are unavoidable, they should be designed and implemented to minimize effects to waterflow, wetland recharge, and ecosystem function.
MTS		G	3	New road construction in riparian areas should be avoided, except to cross the riparian area, unless alternate routes are physically or financially infeasible or have greater overall resource impacts. If these activities are unavoidable, they should be designed and implemented to minimize effects to natural waterflow and native vegetation communities.
NWS		G	1	Projects in upland habitats adjacent to streams should be designed to minimize input of sediment to streams.
NWS		G	2	Water quality, quantity, soil function and structure, and wildlife habitat (including aquatic species habitat) should be protected or enhanced at natural springs and seeps.
NWS		G	3	Fuel buildup should be reduced around natural water sources to protect them from uncharacteristic fire effects.
NWS		G	4	Management activities should not impair soil moisture recharge at outflows of natural water sources.
NWS		G	8	Projects affecting perennial streams should be designed and constructed to allow for natural instream movement of aquatic species, except where barriers are necessary to preclude the movement of nonnative species.
NWS		O	1	Every 10 years, apply for at least 10 instream flow water rights on streams for recreation and wildlife purposes, prioritizing locations necessary for sustaining native fish populations and species of conservation concern.
NWS		O	2	Reconstruct at least 3 developed springs every 10 years to provide aquatic habitat for the recovery of plant and/or animal species.
NWS		O	3	Complete three stream restoration and/or development projects to benefit aquatic species of conservation concern every 10 years.
RAM		G	3	Construction or reconstruction of livestock fencing and replacement of nonpermeable fencing where wildlife movement is restricted should be consistent with the appropriate state wildlife agency standards[1] for safe passage of wildlife and/or species-specific fencing guidelines developed at the local or regional level.

Section	Subsection	Component	No.	Plan Component Language
RAM		G	4	Grazing management practices should be designed to maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological zone. Additionally, grazing management should retain ground cover sufficient for the forage and cover needs of native wildlife species.
RAM		G	7	Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife.
RAM		S	2	New issuance, renewal, modification, and management of grazing permits shall comply with the Coronado National Forest's "Stockpond and Aquatic Habitat Management and Maintenance Guidelines for the Chiricahua Leopard Frog." Additionally, for the San Rafael Valley and surrounding areas, permits shall comply with the Coronado National Forest's "Stockpond Management and Maintenance Plan for the Sonora Tiger Salamander."
RAM		S	3	In areas occupied by lowland leopard frogs, stock ponds will be managed according to the general guidance, as applicable, of the Coronado National Forest's Stockpond and Aquatic Habitat Management Guidelines for Chiricahua Leopard Frog (if lowlands are included in the revised guidelines, then this no longer applies).
REC		G	6	Rock climbing should be managed to balance demand for the activity and the need to protect plants, animals, and other natural resources.
RIA		G	2	Management activities should only be allowed in riparian areas if soil function and structure, hydrologic function and riparian plant communities (except noxious and/or invasive plants) are kept the same or improved.
RIA		G	3	Vegetation treatments should favor the retention of snags, large diameter woody debris, and/or growth of large riparian trees along stream channels.
VIC		G	1	Vegetation treatments in interior chaparral should provide for maintaining a sustainable population of paniculate agaves.
VMP		G	1	Vegetation treatments in Madrean pine-oak woodlands should provide for maintaining a sustainable population of paniculate agaves.
VWM		G	3	Vegetation treatments should be designed to create stand conditions that enhance cone production of white fir, corkbark fir, Engelmann spruce, and Douglas-fir in order to provide a reliable Mount Graham red squirrel food source.
WET		G	1	Management activities should only be allowed in wetlands, including wet meadows, if vegetative communities (except noxious and/or invasive plants), soil function and structure, and hydrologic function are kept the same or improved.

Section	Subsection	Component	No.	Plan Component Language
WET		O	1	Restore native vegetation and natural waterflow patterns on at least 10 wetland sites every 10 years.
WET		S	1	The total acreage of existing wetlands will not be diminished due to management activities.
WIL	PSR	G	1	Recreation facilities should not be developed in the Pusch Peak area.
WIL	PSR	G	2	Trailhead parking areas should be designed to passively limit visitor use at levels that maintain wilderness character.
WIL	PSR	O	1	Annually, treat 200 to 1,000 acres of exotic invasive grass populations (primarily buffelgrass and fountain grass) on the southwest slopes of the Pusch Ridge Wilderness.

1. For Arizona Game and Fish Department, refer to the most recent wildlife water development standards; for New Mexico Game and Fish Department, use available habitat or species-specific guidelines.

Appendix G. Methods of Analysis

This appendix provides details about assumptions and methods used in the effects analyses disclosed in this environmental impact statement, supplementing those described for individual resources in chapter 3 and/or filed in the administrative record of this National Environmental Policy Act review. Certain assumptions common to all resource analyses include the following:

- No direct environmental effects will result from the administrative action of developing or revising the land and resource management plan. Proposed actions will not be approved or otherwise authorized based on the content of the forest plan; however, they must be consistent with plan components, which include desired conditions, objectives, standards, guidelines, designation of management areas, suitability determinations, and monitoring requirements.
- Components of the forest plan reflect current Federal, State, and local laws and regulations, and USDA and Forest Service policy.
- Future funding for projects governed by the forest plan will be similar to that of the past 5 years.
- Effects analyses are applicable for the expected life of the forest plan, which is estimated to be from 10 to15 years, unless otherwise noted in chapter 3.
- Individual proposed actions are not evaluated in this final environmental impact statement nor are they defined by specific location, design, and extent. Rather, the effects described are generic and are used to compare the relative effects of alternatives on a forestwide basis.
- Monitoring during the life of the plan will be used to measure the continued applicability of plan components and the need for future amendments.

Resource Assumptions and Methodologies

Resource-specific assumptions and methods used in assessing the relative benefits of and challenges presented by direction in a revised forest plans proposed by each alternative are described below under separate headings for the five Coronado plan revision need-for-change topics. Because this programmatic environmental impact statement does not quantify site-specific effects, methods traditionally used in effects analysis, such as air quality or hydrologic modeling, are not applicable.

Topic 1: Ecosystem Restoration and Resiliency

Vegetation Communities

Methodology and Analysis Process

Potential natural vegetation types are coarse ecosystem types that share similar geography, vegetation, and historical disturbance processes, such as fire and drought. Their common characteristics are evident when natural disturbance regimes and biological processes prevail. Potential natural vegetation types correlate to the vegetation communities described in the “Vegetation Fuels and Fire” section of the final environmental impact statement. In cases where

certain potential natural vegetation types are not well represented on the Coronado, they are combined under a single vegetation community for the purpose of effects analysis. For example, the montane meadow and wetland vegetation communities were not discernible from potential natural vegetation type mapping; therefore, they are evaluated with the community in which they occur, and the 111 acres of piñon-juniper woodlands were combined with the Madrean encinal woodlands for ease of analysis.

Reference conditions for forest vegetation, for the most part, are based on conditions that existed between the years 1000 to 1880 AD, before major contemporary human factors affected the landscape[3] (USDA FS 2009b). To assess the sustainability of various vegetation communities, current conditions were compared to reference conditions that were identified from a recent review of published scientific literature. This range of variation is reflective of natural disturbance regimes.

Sources of information used to describe reference (baseline) conditions of vegetation include the "Coronado Ecological Sustainability Report" (USDA FS 2009b) and the "Coronado Comprehensive Evaluation Report" (USDA FS 2009c). These are used, in turn, to identify desired conditions (USDA FS 2009d) and Coronado forest plan potential plant community descriptions (Robinett 2010). Desired conditions were developed to balance ecological, social, and economic sustainability. These are included in the revised plan proposed by the action alternatives and are the basis of the following analysis.

For many of the vegetation communities, current conditions and desired conditions are represented quantitatively as seral stage distributions. Distributions were modified from the ecological sustainability report to better represent current conditions and to fit the inputs and parameters of the model used to predict future changes. With this approach, comparable data were maintained among current, desired, and projected future conditions.

In addition to the vegetation mapping that informed current conditions, a vegetation condition class (VCC) analysis was used to quantify the current composition and structure of forest vegetation communities in terms of departure from the reference conditions. Vegetation condition class is a discrete metric that quantifies the degree to which current vegetation conditions are departed from simulated historic vegetation reference conditions. It is calculated using methods described in the Interagency Fire Regime Condition Class Guidebook, Version 3.0, 2010, based on changes in species composition, structural stage, and canopy cover. LANDFIRE (2012) version 1.1.0 ("Refresh 2008") data were used to conduct this assessment. The LANDFIRE data were locally critiqued and updated to reflect recent disturbances, including wildfires through 2011 as well as data regarding the spatial distribution of invasive buffelgrass and fountain grass. Vegetation condition class assesses vegetation departure only and does not include fire frequency and severity departure. However, because 90 percent of vegetation communities on the Coronado National Forest are fire adapted, and about 80 percent are adapted to frequent fire, there is a strong correlation between vegetation departure and the departure of fire frequency and severity. Further description of the vegetation condition class analysis is provided in the Analysis of

[3] It should be noted that many of the large-scale human disturbances known to impact vegetation and ecological processes, such as extensive livestock overgrazing, damming of rivers, canal construction, railroad logging, and fire regime alteration, were widespread in the area prior to establishment of the Coronado. The notable exception was active fire suppression, which was implemented in the national forests as a standard management practice in the early part of the century.

Vegetation Condition on the Coronado National Forest (Helmbrecht 2013) found in the planning record. Three vegetation condition classes describe low departure (VCC 1), moderate departure (VCC 2), and high departure (VCC 3; see table 149).

Table 149. Vegetation condition class (VCC) descriptions

Vegetation Condition Class	Range of Stratum Vegetation Departure	Description
VCC 1	≤ 33%	Similar to the reference condition
VCC 2	> 33% to ≤ 66%	Moderately departed from the reference condition
VCC 3	> 66%	Highly departed from the reference condition

The vegetation communities used in the draft proposed plan and the LANDFIRE biophysical setting classifications used in the vegetation condition class assessment are similar in concept—they both represent the site potential under the historical disturbance regime—but the actual classes used by each differ. Although there are spatial discrepancies, to maintain consistency with the revised forest plan, the vegetation condition class analysis results are organized by vegetation community. The Analysis of Vegetation Condition on the Coronado National Forest (Helmbrecht 2013) contains further discussion of the analysis and data limitations.

The vegetation condition class analysis was conducted at a scale appropriate to reflect the discontinuous "sky island" character of the forest. The departure of specific communities from vegetation condition class results were tabulated for each ecosystem management area. For this analysis, vegetation condition class departure results are summarized by vegetation community (table 150). Percent departure represents the overall stratum departure for the vegetation community across the forest. For example, the desert community is 59 percent departed from reference conditions across the forest, placing it in VCC 2, or moderate departure. Detailed vegetation condition class information by ecosystem management area can be found in appendix C of the Analysis of Vegetation Condition on the Coronado National Forest report (Helmbrecht 2013).

Table 150. Vegetation condition class (VCC) and departure for each vegetation community*

Vegetation Community	Departure	VCC	Description
Desert	59%	2	Moderate departure
Grassland	81%	3	High departure
Interior chaparral	78%	3	High departure
Madrean encinal woodland	35%	2	Low to moderate departure
Madrean pine-oak woodland	50%	2	Moderate departure
Ponderosa pine-evergreen shrub	81%	3	High departure
Dry mixed-conifer	69%	3	Moderate to high departure
Wet mixed-conifer	58%	2	Moderate departure
Spruce-fir	34%	2	Low to moderate departure
Montane meadows, wetlands, and riparian areas	60%	2	Moderate departure

* Vegetation condition class departure was calculated from a weighted average based on each vegetation community and the acreage represented on the mountain ranges.

State and transitions models played a prominent role in the plan revision process in the Southwestern Region. The Vegetation Dynamic Development Tool (VDDT) is a state and transition model developed by the Southwestern Region and the Coronado National Forest, and calibrated by Forest Vegetation Simulator (FVS) outputs. For the plan revision analysis, the Vegetation Dynamic Development Tool was used to quantify projected future vegetation conditions in forested and woodland communities. This approach allowed for the quantitative comparison of the effects of vegetation management under each alternative. Projected changes in vegetation from reference conditions appear as "departure" percentages, which are a measure of trends toward achieving desired conditions. In some cases, departure is also used to show strength of a trend; however, in this analysis, departure percentages often vary little by alternative, and trends are difficult to predict. Projected future vegetation conditions in the desert, grassland, and interior chaparral communities were estimated using the ecological sustainability report (USDA FS 2009b), published literature, and local expertise.

Vegetation conditions on the Coronado National Forest and data (FVS outputs) that informed Vegetation Dynamic Development Tool modeling were affected by wildfires that have occurred since modeling was completed in 2009. Consequently, assumptions were made as to how fire affected current conditions, Vegetation Dynamic Development Tool modeling results, and movement of vegetation toward desired conditions. In areas affected by fire, burn severity mapping informed predictions of vegetation change. In areas unaffected by fire, it was assumed that seral stages remain present in the same proportions; therefore, original Vegetation Dynamic Development Tool projections still apply to those areas. The Coronado National Forest updated modeling to encompass all alternatives and vegetation communities and the effects of the 2011 fire season. This updated information improved the vegetation analysis.

Assumptions and Limitations

In the analysis for vegetation, fuels, and fire, the following additional assumptions and limitations were made:

- There are minor, acceptable inconsistencies between the number of acres on the forest between the Coronado National Forest administrative boundary and the potential natural vegetation types GIS data layer.
- The Interagency Prescribed Fire: Planning and Implementation Procedures Guide continues to provide clear direction regarding the use of planned ignitions (USDA and USDOI 2008).
- Acres treated, from both mechanical and fire treatments, are effective and improve (or reduce) departure because they alter vegetation composition and structure (e.g., tree density, crown base heights, and fuel load and arrangement) and move the vegetation community toward reference conditions.
- A set acreage would be treated (both mechanical and fire) each year and varies by vegetation community and alternative. The actual acres treated may fluctuate yearly due to the number, timing, and location of wildfire starts; National Environmental Policy Act analysis completed; availability of resources; weather conditions; fuel conditions; and smoke management and socio-political factors (e.g., burn bans or fire restrictions). Unpredictable factors such changes in Federal or regional fire policy may also influence actual acres burned. The number of acres treated is dependent on many variables, few of which are within the Coronado's direct control.

- Plan objectives are achievable considering budgets, project planning timelines, and external factors (e.g., weather conditions and fuel conditions) over the next 10 years.
- Plan objectives are achievable because there are no major changes in policy or other factors over the next 10 years.
- Treatment objectives utilizing wildland fire assume a portion of the acres treated will be accomplished through unplanned ignitions. Wildland fire utilized to meet forest plan objectives burns characteristically in the vegetation community and contributes to the movement toward desired conditions.
- These acreage assumptions are based on past and predicted opportunities and consider fuel conditions, smoke management factors, and treatment effectiveness.
- Low-severity fires result in less than 25 percent replacement of the dominant overstory vegetation when burned, whereas mixed-severity fires result in 25 to 75 percent replacement of the dominant overstory vegetation, and stand-replacing fires result in greater than 75 percent replacement of the dominant overstory vegetation.
- There is no surrogate for the occurrence or application of fire; it is critical to ecological restoration.
- The vegetation communities adapted to frequent fire have been without fire for at least 100 years, therefore, movement toward historic fire return intervals will take time.
- The effect of 2011 fires on current conditions was informed by the distribution of burn severities and likely transition between seral states based on state and transition models.
- Reference and desired conditions represent identical conditions, except where wildland-urban interface dictates vegetation structure, composition, and fuel loadings that support low-intensity surface fire to reduce the impacts of wildfire on communities. The distribution of reference seral stages was not changed to reflect desired conditions; therefore, tables that report seral stage distributions, desired conditions, and reference conditions can be used interchangeably.

Soils

Assumptions and the approach to comparing the relative effectiveness of plan alternatives are reported in the text of the soils discussion in chapter 3. No models are available to predict trends and future foreseeable conditions for soil resources, in particular, soil condition, soil productivity, or soil organic matter. However, qualitative inferences can be made and estimated which provide insight into future soil condition primarily by using knowledge about present disturbances and their effect on erosion processes, soil compaction, and nutrient cycling.

According to Southwestern Region supplement to Forest Service Handbook 2509.18, soil condition is a combined function of soil hydrology, soil stability, and nutrient cycling. Current Coronado soil condition ratings reported in this environmental impact statement are based on how departed soils are from the historic range of natural variability.

The relative value of plan components among alternatives were described in terms of the differences in the number of acres treated to improve soil and vegetation conditions between the alternatives, or in the number of acres protected by a wilderness designation.

Water Resources

Following is a brief description of the methodologies and/or approaches used to evaluate direction of the alternatives related to watershed condition, water quality, and water yield and availability (quantity). Effects on water resources are not site specific because of the programmatic nature of this environmental impact statement. Much of the background information is excerpted from the Ecological Sustainability Report for the Coronado National Forest (Forest Service 2007, from Brown et al. 1974).

Water Quality

Water quality data reported in this environmental impact statement was obtained from the results of analysis reported by Arizona Department of Environmental Quality and the New Mexico Environment Department. The “Water Resources” section in chapter 3describes water quality standards and use criteria established by both state agencies. No modeling was conducted as part of the water quality effects analysis.

Water Quantity – Surface Water

Information reported in chapter 3 about water yield and availability is excerpted from the “Ecological Sustainability Analysis” report cited above. The plan alternatives differ in the number of instream flow rights applications that will be monitored and submitted to the Arizona Department of Water Resources. Methods will follow Arizona Department of Water Resources guidelines. No modeling was conducted as part of the environmental consequences analyses.

Water Quantity – Groundwater

Groundwater use and quality is regulated by the States of Arizona and New Mexico. No modeling was conducted for the environmental consequences analyses.

Watersheds

An initial assessment of watershed conditions was made using the national watershed condition framework and assessment tool. Watershed condition was determined in accordance with direction in Forest Service Manual 2521.1. No modeling was conducted for the environmental consequences section.

Air Quality

The air quality analysis in this environmental impact statement reports the relative effects of the alternatives qualitatively because of the programmatic nature of the proposed action. Management actions in the short term (15 years) are assumed for this analysis.

At the site-specific or project level, air quality analyses use technical models to estimate the incremental concentration of various air pollutants that will be added to ambient concentrations, to which national ambient air quality standards apply. Resource analysts must make assumptions about these factors. However, at a programmatic, forestwide scale, the uncertainties associated with these assumptions are too great to allow for reliable analysis using these tools. Thus, effects on air quality reported in this environmental impact statement are qualitative, not quantitative, and significance is not based on effects on ambient concentrations of national ambient air quality standards.

Rather than the guidance presented by each of the alternatives, the extent of smoke effects from wildfires on the Coronado National Forest will depend on numerous location-specific factors that are difficult to predict over the long term. These include but are not limited to, dispersion and dilution parameters, live and dead fuel conditions, wind direction and speed, firing techniques, timing, and duration of ignition, and various fuel arrangements and loading.

The time of year burns take place is a factor that greatly influences ventilation and would have more effect on smoke impacts than number of burn days or acreage burned per day; however, this factor is more appropriately evaluated at the project level. While the factors influencing smoke production do vary by season, the plan alternatives do not contain direction or restrictions about seasonality of burning that would drive difference between the alternatives. Project-level decisions about when to burn would vary by the specifics of the site conditions and the desired conditions for the project. In addition, climate change may add increased uncertainty when predicting the season of implementation.

Uncharacteristic wildfires are those that occur under vegetative and climatic conditions that are not typical to the vegetation types' historic fire regime. In many cases, uncharacteristic wildfires occur under hotter, drier conditions with more continuous fuel, and they grow faster and produce more smoke than fires that burn under conditions that are closer to the historic range of variability. When natural caused wildfires occur under conditions closer to this range, the agency may be able to manage them to maintain the historic range of variability and to benefit wildlife, soils, watersheds, and other ecological components of the respective ecosystem.

Species Viability

Wildlife, Fish, and Rare Plant Population Viability

Purpose of Analysis

The 1982 implementing regulations define a viable population as: "one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area." The population viability assessment is the means by which the Coronado National Forest ensures that viable populations are maintained as management direction within the revised forest plan is implemented, once approved.

General Caveats

No downstream or off-forest species were included. Extirpated species were generally not included unless there was reason to believe the species was likely to become reestablished in the reasonably foreseeable future or if habitat restoration would set the groundwork for recolonization.

Taxonomic and Nomenclatural Standards

U.S. Forest Service Washington Office direction specified the use of the Integrated Taxonomic Information System[4] as the taxonomic standard for animals. The system is inconsistent in the use of common names and does not recommend standard English names. Whenever possible, we

[4]The Integrated Taxonomic Information System database is available at http://www.itis.gov.

used the standard English names recommended by the professional societies that publish peer-reviewed lists. In some cases, species not considered valid in the Integrated Taxonomic Information System were either deleted from further consideration or their taxonomic equivalents were retained, depending on the biological interpretation of the taxonomy. Personal communication (December 2010, L. Jones, Coronado National Forest) with Integrated Taxonomic Information System personnel revealed that taxonomy and nomenclature of most taxonomic groups are not current, so this was considered in our final selection of taxonomies (i.e., scientific names).

The Forest Service standard for plants is USDA Plants.[5] In cases where information in the Plants database was outdated, we used best available science to make taxonomic decisions.

Forest Planning Species

"Forest planning species" is a descriptive term developed by forest planning staff to describe species selected for detailed analysis during the population viability assessment process. Species not included in this designation, but occurring on the Coronado National Forest, are assumed to be viable because their populations and habitats are significantly well distributed such that there are no perceived risks to viability.

Based on the Region 3 guidance, the list of forest planning species includes threatened, endangered, and candidate species; rare species; U.S. Forest Service Southwestern Region sensitive species; and other species of conservation concern. Each of these categories is described subsequently in further detail. Numerous species share multiple designations and require that conflicting taxonomies and nomenclature be resolved on a case-by-case basis.

Threatened, Endangered, and Candidate Species

Species in this category are federally listed as threatened, endangered, or candidate species under the Endangered Species Act of 1973. A list was compiled in August 2010 using the U.S. Fish and Wildlife Service Arizona Ecological Services website[6] for all counties in the planning area (i.e., the Coronado National Forest). Species known, or believed, to occur in the boundaries of the Coronado National Forest were retained as forest planning species (although some extirpated or potentially occurring species were also retained, as mentioned previously), including those occurring in both New Mexico and Arizona portions of the Coronado National Forest.

[5] USDA Plants is an online database available at http://plants.usda.gov.

[6] Lists are available at http://www.fws.gov/southwest/es/arizona/Threatened.htm#CountyList

Rare Species

Rare species are those ranked within NatureServe[7] as G1-G3 (rounded)[8] in February 2006, when the list was initially compiled. Species believed to occur on the Coronado National Forest were retained as forest planning species. Species that had questionable taxonomy and nomenclature ("Q", according to NatureServe) were generally not retained (although not without exception; NatureServe is not the standard for taxonomy or nomenclature so deletions were made on a case-by-case basis).

Sensitive Species

All species on the most recent (October 2007) Forest Service Southwestern Region (Region 3) sensitive species list were retained as forest planning species, if they occur within the boundaries of the Coronado. Infraspecific designations of taxa on the sensitive species list were often not recognized by the Integrated Taxonomic Information System, USDA Plants, or NatureServe, so most of these taxa were considered at the species level.

Other Species of Conservation Concern

Species not fitting into one of the above categories were added to the list when concerns about their populations warranted additional consideration. Not all are considered rare, but all are of conservation concern. For example, white-tailed deer is a commonly hunted species that is of conservation concern because habitat quality is deteriorating. Another example is the monarch butterfly, a species that is still common and widespread (e.g., G5 in NatureServe), but populations and habitats are declining. State game and fish departments of Arizona and New Mexico helped compile this portion of the forest planning species list. Commonly hunted and fished animals were often included in this list, as were species of greatest conservation need (a designation of species of conservation concern for each State).

Information Collection and Best Available Science

Prior to assessing the viability of populations of forest planning species, information on the natural history of each species was compiled. Because of the sheer number of species (about 1,500 initially considered), budget constraints required that information collection contributing to the best available science be efficient but not exhaustive. The following sections describe the types of information collected in physical and electronic media.

Hard Copy References

The first approach to finding natural history information was seeking readily available reference books. For example, Hoffmeister's "Mammals of Arizona" (1986) and Kearny and Peebles' "Arizona Flora" (1960) were the primary depositories of knowledge at the time they were published and contributed a wealth of information on taxonomic classification, historical population trends, and expected range. When reference books were not sufficient, other literature was used, including Arizona Game and Fish Department's plant and animal abstracts. These

[7] NatureServe is an online, status-ranking resource available at http://www.natureserve.org/explorer/index.htm

[8] NatureServe Global (G) Conservation Status Ranks consider each species' status rangewide (ranges extend beyond forest boundaries in almost all cases) and are described as follows: G1=Critically Imperiled; G2=Imperiled; G3=Vulnerable; G4=Apparently Secure; and G5=Secure (definitions of G-ranks and more information available at http://www.natureserve.org/explorer/ranking.htm)

unpublished reports[9] are extremely valuable synopses of known information up to the time they were produced; thorough abstracts sometimes included all the information needed for an assessment. Further literature searches were completed by species at the University of Arizona, primarily using two indices: BIOSIS Biological Abstracts and Zoological Record.[10] Resources listed in these indices were obtained through the University of Arizona, the U.S. Forest Service Rocky Mountain Research Station, or other publication outlets. Additional reputable resources were used whenever available; these included agency technical reports, professional anecdotes, personal communications, and unpublished data.

Online References

When the process of gathering natural history information began in 2005, online resources were limited and the most useful resources included sites such as NatureServe and BISON-M.[11] By 2010, the pool of readily available useful information had greatly increased. For species requiring updated information, the Google and Google Scholar search engines typically provided useful information on the first three pages of returns; these included online databases, scientific and academic research (including several theses and dissertations), and professional publications, among others. Additionally, when the Forest Service incorporated DigiTop,[12] many new and previously unavailable references became accessible. New or recently updated websites, such as those following, provided supplemental natural history information when publications or other references were insufficient:

- Madrean Archipelago Biological Assessment (http://www.madrean.org/maba/symbflora)
- Southwest Environmental Information Network (or SEINet) for distribution maps and locality information (http://swbiodiversity.org/seinet/index.php)
- Butterflies and Moths of North America (http://www.butterfliesandmoths.org)
- Butterflies and Moths (http://www.butterflies-moths.com/index.html)
- eFloras (http://www.efloras.org/index.aspx): the online version of Flora of North America (http://www.fna.org)
- Consortium of North American Lichen Herbaria (http://symbiota.org/nalichens)
- New Mexico Rare Plants (http://nmrareplants.unm.edu)

Documenting Information Resources

References were noted in a single column of the population viability spreadsheet (as described below). NatureServe natural history information was printed out and retained for most species, as were the Arizona Game and Fish Department's plant and animal abstracts; electronic copies of the versions used during the assessment were also stored in Adobe's portable document format

[9] Although portions of many of the abstracts are available online (at www.azgfd.gov/w_c/edits/species_concern.shtml), these references are discussed in the "Hard Copy" section because expanded versions containing locality information are maintained in hard copy format at the supervisor's office.

[10] Both databases are Thomson Scientific products of Thompson Reuters (more information at www.thompsonreuters.com).

[11] Biologic Information System Of New Mexico (BISON-M) contains species accounts for vertebrates and invertebrates in New Mexico and Arizona; it is available at www.bison-m.org.

[12] DigiTop is USDA's Digital Desktop Library, a service available to employees of certain USDA agencies at http://digitop.nal.usda.gov

(PDF). Online publications were sometimes printed but always retained as PDFs. Book covers and relevant book pages were scanned and retained as PDFs as well. Some references are only available for viewing in the University of Arizona library, and so these were not reproduced. Information acquired from online databases was almost always saved in PDF format. All electronic copies are filed on a Forest Service server and are included within the official project record. URLs are not always permanent, so they were generally not recorded, except as a reference by name or in this document.

Population Viability Assessment Process

Complementary goals of the assessment were to create a repository of information on potentially at-risk species across the Coronado; to identify management risks of those species, as well as the extrinsic factors that forest managers cannot control; to determine whether management direction within the revised forest plan is sufficient to mitigate management risks to species; and to inform the development of additional plan direction that would ensure viable populations of all forest planning species[13] across the Coronado National Forest. The population viability spreadsheet[14] is the means by which Coronado National Forest biologists streamlined the process to accomplish these goals.

Population Viability Spreadsheet

The population viability spreadsheet is the backbone of the viability assessment: it includes all species that were carried into analysis (i.e., forest planning species). Earlier iterations of working drafts are electronically archived, and contain many more species as filtering occurred over time. Each workbook of the spreadsheet corresponds to a taxonomic group (e.g., mollusks, mammals, birds, etc.) or contains metadata (e.g., codes or references). For taxonomic-group workbooks, each row represents a species and each column contains recorded information needed to complete the assessment. Columns are either stand-alone or grouped within a broader heading that correspond to the role needed for analysis. They are arranged left-to-right, correspondingly described[15] top-to-bottom, as follows:

Background Information

- Scientific name
- Common [or standard English] name
- Status
- Occurrence
- G-Rank [NatureServe, 2006 or updated]
- Range and distribution [narrative, globally to locally]
- Physical habitat [narrative]
- Biotic Habitat [narrative]

[13] Note that any species that occurs on the forest but is not considered a “forest planning species” is assumed to be viable because their populations and habitats are significantly well distributed such that there are no perceived risks to viability.

[14] The spreadsheet is a Microsoft Excel file retained within the official project record.

[15] Further descriptions of each column heading can be found within the metadata segment of the population viability spreadsheet.

- Associated species [narrative]
- Population information [narrative]
- Notes [general, narrative]
- References [resources cited]

Evaluation Criteria

- Cells [physical and biotic habitat components]
- Ecosystem management area(s) of species' occurrence]
- Threats and risks [narrative]
- Suitable habitat [yes or no]
- Habitat trend [qualitative]
- Population trend [qualitative]

Coarse Filter

- Plan content (forestwide) [locator for applicable plan content]
- Risks mitigated [yes or no]
- Notes [narrative, on mitigation of risk or population viability concerns at coarse-filter level]

Fine Filter

- Plan content (specific) [locator for applicable plan components]
- Risks mitigated [yes or no]

Extrinsic Factors

- Beyond Forest Service control [yes or no]
- Notes [on role of extrinsic factors for population viability and risk mitigation concerns]

Assessment within the Spreadsheet

Because most of the pertinent information is within the columns of the spreadsheet, it serves as a stand-alone document allowing Coronado biologists to assess population viability for each species, although always in combination with professional judgment. The process of making an assessment basically begins on the left side of the spreadsheet and proceeds to the right, with each set of columns informing the next. The following discussion summarizes the information used in making an assessment.

Background Information

This furthest left section of the spreadsheet helped paint a picture of the overall natural history of the species. There is information on distribution, from the global scale to local scale; habitat use; references; and so on. It does not include extraneous information not usually needed for an assessment, such as a species description. The narratives in the "Background Information" columns were used to populate fields in the "Evaluation Criteria" section. Background information was often referred to iteratively during the assessment process.

Evaluation Criteria

This section is nonnarrative (except for "Threats and Risks"), containing concise biological interpretation of the information presented in the "Background Information" section. Evaluation criteria were used in conjunction with revised forest plan direction to determine whether risks to population viability have been sufficiently mitigated.

- **Threats and Risks.** These were summarized from references only; the biologists did not populate this field with their own interpretations or conjecture. However, many references did not specify potential threats. In most of these cases it was possible to build plan components that would contribute to a species' viability without knowing specific threats. For example, if the precise locality is known for a rare plant, then logic dictates the site should be considered for mitigation during large, ground-disturbing activities. Additionally, planning biologists extrapolated likely threats by considering the natural history features of a plant or animal. For example, a rare wetland-associated species would almost certainly be threatened by draining wetland habitat.
- **Cells.** A coding system was developed to assign physical and biotic attributes of habitat to each species, based on information contained in background information. (The coding system began as cell designations at junctures in a matrix – hence the name "Cells" – but were later simplified and listed in the Metadata workbook of the spreadsheet.) Codes A through H refer to biophysical attributes (e.g., riparian, lotic, cave, terrestrial) used by the species, while codes 1 through 9 refer to vegetation communities (e.g., desert communities, Madrean encinal woodland) where the species occur(s); these classifications were derived from The Nature Conservancy's potential natural vegetation types.[16] In some instances, a species may not actually "use" the vegetation community per se, but the classification places parameters on the range of elevation where management activities are likely to occur. For example, an aquatic insect may be affected by runoff from vegetation treatments upslope; therefore, those upslope vegetation communities would be included in this column.
- **Ecosystem Management Areas.** Codes corresponding to each of the Coronado National Forest's ecosystem management areas are listed in this column to designate which mountain range(s) the species occurs in, or is likely to occur in. Most ecosystem management areas are made up of a single mountain range, although some are actually contiguous clusters of smaller mountain ranges, isolated from one another by desert and grassland valleys. Generally species that are endemic or limited to one or two ecosystem management areas are considered more likely to be at risk from extinction or extirpation (either of which would result in a failure to maintain well-distributed, viable populations) than those that are more widely distributed.
- **Suitable Habitat**. If a specific habitat type can be associated with a given species, and that habitat type is present on the Coronado National Forest, this column is noted affirmatively. Nearly every species retained in the most current version of the spreadsheet is designated as such, except in rare circumstances; earlier versions included more species for which habitat was not available, but these were filtered out over time because species for which no habitat occurs are not likely to be present on the Coronado and, therefore, do not require a viability assessment. The cases in which this column reflects unknown or no suitable habitat are when habitat association is uncertain, when species occurrence on the Coronado National Forest is

[16] The Nature Conservancy assessments of potential natural vegetation types are filed in the administrative record.

likely but undocumented; and where habitat previously existed on the Coronado and is likely to be restored through management actions or natural recovery.

- **Habitat Trend**. The condition of each species' habitat was based on historical, current, and projected future condition of vegetation communities, as well as site-specific considerations, such as recent fire activity or invasive species encroachments. Trends were based on reference condition, given the assumption that management would continue as described in the 1986 forest plan. A "-" suggested a downward trend in habitat quality, quantity, distribution, or some combination of those things. A "+" suggested a stable or upward trend in habitat quality, quantity, distribution, or some combination of those things. Determining habitat trend was not always straightforward; however, there were at least two scales to consider and more than one vegetation type is typically used by each species. Trends in vegetation and habitat quality at the forestwide scale differ among vegetation types and between historical and projected conditions. A species might occupy vegetation communities that are both downward and upward trending at the different timescales. At the ecosystem management area or more local level, trends were also evaluated using a detailed map of fire regime condition class, which displays the degree of departure of fire regime and vegetation community characteristics from reference condition. Other sources of information were also used to determine habitat trend, such as the presence of invasive species and land use patterns. Thus, each habitat trend determination was distilled from multiple data sources on a case-by-case basis. Rarely, a "U" (indicating "unknown") was entered into the column for a particular species where there were large gaps in knowledge.
- **Population Trend**. The trend in distribution and abundance of a species was recorded using "-" (indicating a declining trend), "+" (indicating a stable or increasing trend), "0" (indicating unknown or unlikely species presence on the Coronado), and "U" (indicating an unknown population trend). Information in this column was based purely on literature sources that specifically addressed population trend, lending to frequent determinations of unknown. These were difficult to interpret, but didn't always imply elevated risk to a species, since endemism and natural rarity are not uncommon in this ecological region.

Coarse-Filter/Fine-Filter

Species viability was assessed using the coarse-filter/fine-filter approach.[17] At the coarse-filter level, broad management practices that focus on minimizing departure of current condition from reference condition at the ecosystem and forestwide scales are sufficient to minimize risks to viable populations of most species. In order to assess this, a primary tool in assessing whether forestwide plan components will be sufficient to ensure population viability is the vegetation condition class. The vegetation condition class indicates vegetation condition departure from reference conditions and was incorporated in this portion of the assessment. A more thorough discussion of habitat communities, departure from reference condition, and the expected effects of the no-action alternative and the proposed action on departure levels may be found in the "Species Diversity" section of this document.

With respect to the revised forest plan, components that address whole vegetation communities and forestwide program administration (such as range, animals and rare plants, or recreation) are considered under the coarse filter. The kinds of species that might "fall through the coarse filter" are those whose risks to viability are not addressed sufficiently by forestwide management

[17] This approach was standardized by Region 3 for all national forests in the plan revision process.

practices; in these cases, vegetation structure and composition departure from reference conditions cannot be addressed for these species, or the protections provided by coarse-filter plan components are inadequate to ensure the viability of the species. These situations tend to arise for species that are local endemics; species whose habitat is not well distributed; species whose habitat is well distributed but not occupied; species whose habitat is in poor ecological condition; or species that require fine-scale habitat components.

At the fine-filter level, additional conservation approaches are necessary to mitigate risks to population viability. Typically, these are in the form of ecosystem management area-specific plan components, or plan components that address particular natural history traits or specific risk factors.

In some cases, the risks to species viability cannot be mitigated with either coarse-filter or fine-filter management approaches because the limiting factors are beyond Forest Service control. These are known as extrinsic factors. Examples include a changing climate, long-term drought, disease, and invasive species. Often, while managers cannot entirely eliminate extrinsic factors, they may be able to minimize their effects on species, either through mitigation (e.g., exclosures to protect against exotic species) or active management (e.g., targeting an area for ecosystem restoration to benefit a particular species or species group); both approaches are incorporated to some degree in plan components of the revised forest plan.

The coarse-filter/fine-filter approach is documented on the right side of the population viability spreadsheet, with a section for each scale. These columns are the culmination of the viability assessment, offering a determination of population viability for each forest planning species based on revised plan direction. Because the columns serve virtually the same purpose in both the fine- and coarse-filter sections and are given similar headers, they are described in summary below.

- **Plan Content (Forestwide or Specific).** Plan content is the text portion of a forest plan that includes plan components and other plan content.[18] Plan components consist of desired conditions (or goals), objectives, guidelines, standards, suitability, special areas, and monitoring; other plan content includes general descriptions, management approaches, background information, and all appendices.[19] Codes were developed to describe both plan components and other plan content for each section of the revised forest plan;[20] the codes that are relevant to each species or the risks facing each species are listed in the plan content column(s) of the population viability spreadsheet, with either forestwide (i.e., coarse-filter) direction, and/or ecosystem management area- or species-specific (i.e., fine-filter) direction. Conceptually, conservation approaches at the coarse- and fine-filter levels would provide sufficient protections for each species to be given a viable determination. While other plan content cannot be used to assess population viability (because any guidance or aspirations contained therein are nonbinding), codes describing other plan content were included in these columns to paint a complete picture of management intention with respect to each species.

[18] Once approved, plan components are plan decisions; substantive plan decisions can only be modified with a plan amendment, while non-substantive decisions and other plan content can be modified through an administrative correction.

[19] For an explanation of these categories of content, see chapter 1 of the revised plan.

[20] Codes are described in a worksheet of the population viability spreadsheet titled PlanComponentCodes.

- **Risks Mitigated (both Coarse- and Fine-filter).** These columns are the evaluation criteria and plan components used to ascertain whether risk factors have been sufficiently mitigated to achieve population viability for each species. Provisions of the 1982 Rule require that the forest "maintain viable populations of all existing native and desirable nonnative species well distributed across the planning area [Coronado National Forest]." In other words, for every population occurring on the Coronado: (1) the species is secure and well distributed in the planning area; (2) plan components have mitigated direct risks to the species; and/or (3) plan components provide guidance to restore ecosystem resiliency where the species occurs. In theory, the Coronado must meet these conditions for all species known to be present; however, in cases where insufficient natural history information is known to design meaningful plan components, or for species with threats that are largely beyond the control of the forest, conservation measures contained within the plan are presumed to meet these conditions. Consequently, determinations in the "Risks Mitigated" columns are noted as such: "Y", if at least one of the three above conditions is met; "N", if none of the above conditions were met; or "P", if restoration and mitigation plan components are presumably beneficial to the species. For "Y" and "P" determinations, the forest has met requirements to maintain viable populations as described by provisions of the 1982 Rule. Any "N" determinations led to development of ecosystem management area- or species-specific conservation measures at the fine-filter scale.
- **Notes.** Under the coarse-filter section, justification or additional information pertaining to the risks mitigated determinations are contained within the "Notes" column. For example, if a species is given a determination that seems contrary to the progression of information in the spreadsheet, there should be an explanation. Also, any intuitive information on threats or mitigations would be incorporated here.
- **Extrinsic Factors** includes two columns ("Beyond FS Control" and "Justification") to document whether there are factors beyond Forest Service control that limit the forest's ability to provide for viable populations, including a short justification.

FEIS Alternatives

The population viability assessment was composed for the revised forest plan, but not completed to the same extent for the no action or subsequent alternatives. However, the no-action alternative is very different from the revised forest plan and alternative 1, and those two alternatives are different in one important feature (14 parcels of additional areas managed for wilderness values in alternative 1), but otherwise plan components and other plan content are largely the same, except with regards to the areas managed for wilderness characteristics. Alternative 2 differs from the revised forest plan in areas managed for wilderness characteristic and motorized recreation, but most components were the same as the other action alternatives. Separate population viability assessments were not completed for each alternative. Rather, the biology specialist report and final environmental impact statement compared alternatives for forest planning species as a whole, as well as for functional groups of species, such as cave-dwellers, rock-dwellers, aquatic species, sensitive species, threatened and endangered species, and management indicator species.

Findings

In summary, a total of 437 species were assessed for potential population viability concerns. The population viability spreadsheet lists references from which these summaries were derived. Species population viability findings are discussed in the "Regionally Sensitive Species and Other

Forest Planning Species – Environmental Consequences" section of the final environmental impact statement.

Topic 2: Visitor Experiences

Recreation

The recreation opportunity spectrum provides a framework that allows administrators to manage and users to enjoy a variety of recreation environments. The recreation opportunity spectrum is not a land classification system; it is a management objective, a way of describing and providing a variety of recreation opportunities (USDA FS 1982). The recreation opportunity spectrum provides a framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged along a spectrum divided into seven classes. The names of the classes are descriptive to provide utility in land management planning and other applications. Each class is defined in terms of its combination of activity, setting, and experience opportunities (USDA FS 1990). Opportunities for experience along the spectrum represent a range from a very high probability of solitude, self-reliance, challenge, and risk (i.e., primitive) to a very social experience where self-reliance, challenge, and risk are relatively unimportant (i.e., rural or urban) (USDA FS 1990).

The basic assumption underlying the recreation opportunity spectrum is that quality in outdoor recreation is best assured through provision of a diverse set of opportunities. Providing a wide range of settings varying in level of development, access, and other factors insures the broadest segment of public will find quality recreational experiences, both now and in the future. Although the notion of quality is relative—a value judgment—the concept of quality can be stated for management decision purposes in this way: quality depends on what experiences the individual is looking for, how much of it is realized, and the degree of satisfaction (USDA FS 1990). A recreation opportunity setting is defined as the combination of physical, biological, social, and managerial conditions that give value to a place. Thus, an opportunity includes qualities provided by nature (vegetation, landscape, topography, scenery), qualities associated with recreational uses (levels and types of use), and conditions provided by management (developments, roads, regulations). By combining variations of these qualities and conditions, management can provide a variety of opportunities for recreationists (USDA FS 1990).

Recreation opportunity spectrum mapping for the Coronado was completed in the early 1980s and used in the 1986 forest plan. Since that time, there have been changes to the Coronado National Forest boundary (such as the addition of Catalina State Park and improved ALP GIS land management boundaries), forest plan amendments that altered recreation opportunity spectrum settings (including the Smithsonian Base Camp and Mount Graham International Observatory), and improved road system and recreation site mapping (GPS and GIS). All of these affect recreation opportunity spectrum maps. The Coronado is currently remapping the recreation opportunity spectrum using new data and information, and the new maps will be complete before forest plan revision is complete. Because roads affect recreation opportunity spectrum settings, the maps will likely need to be updated once travel management is complete. The general settings across the forest will remain largely the same, but acres of each setting (as shown in the environmental impact statement) will change.

The national visitor use monitoring project is a nationwide survey conducted on every national forest every 5 years. The surveys are in-person exit interviews and are administered at sites selected from a stratified random sample based on level of use (high, medium, and low) and type of site (day use, overnight, general forest, and wilderness). The sample is used to estimate forest-level visitation data based on a model that is designed based on nationwide trends and assumptions. This ensures all national forest visitor estimates are comparable. The corresponding limitation is that it cannot be generalized below the forestwide level without supplemental collections. The reliability of the data also is dependent upon the consistent classification of sites and survey design as well as the assumption that the on-the-ground conditions are not very unusual. For example, a year with no snow and lengthy forestwide fire closures would yield very low results because of an abnormal amount of canceled survey days and reduced winter recreation. This report uses data from the 2007 survey because the more recent 2012 survey data were not available. Visitation in this survey is measured in site visits, which are "the entry of one person onto a national forest site or area to participate in recreation activities for an unspecified period of time" and national forest visits, which can be composed of multiple site visits. National visitor use monitoring does not identify the type of recreation preferred by visitors or track how visitors whose desired activities is not offered are displaced. It only captures the activities of the person surveyed during the particular national forest visit being counted (USDA FS 2012).

In the analysis for this resource, the following additional assumptions were made:

- Recreation demand is generated by population changes and economic conditions more strongly than by plan direction.
- The budget for constructing and maintaining developed recreation facilities will be flat to decreasing in the future except in areas that have been converted to fee sites or concessionaire contracts.

Road system changes are analyzed in the "Motorized Transportation" section of the environmental impact statement.

Scenery

In 1986, when the Coronado National Forest Land and Resource Management Plan was adopted, scenic resources had been inventoried and analyzed using the Visual Management System as outlined in Forest Service Handbook 462 (USDA 1974). This system, which was released in 1974, established standards of measurement (i.e., visual quality objectives) for assessing proposed and existing impact to scenic quality.

In 1995, after 20 years of experience with the Visual Management System and after additional research in the public and private sectors, the Forest Service revised the system and replaced it with the Scenery Management System. This revised system is described in Agricultural Handbook 701, Landscape Aesthetics: A Handbook for Scenery Management (USDA 1995). The scenery management system was used in combination with the visual management system in this analysis because the Scenery Management System will not fully replace the Visual Management System on the Coronado National Forest until the revised forest plan is adopted.

Although both systems manage scenic resources, there are differences between them. Most concepts are the same in both systems, but often terminology has changed. Both systems establish objectives (visual quality objectives or scenic integrity objectives) to measure the degree of

alteration or deviation permissible in a landscape. The definitions for these objectives are similar, but application is slightly different.

The Visual Management System measures alterations in terms of the degree of acceptable alteration of the characteristic landscape where any human alterations or changes in the landscape would be considered negative. The Visual Management System Handbook also establishes durations of impact for visual quality objectives: retention should be accomplished during project operation or immediately after project completion; partial retention should be accomplished as soon after project completion as possible or at a minimum within the first year; modification should be accomplished in the first year; and maximum modification within 5 years (USDA 1974).

The Scenery Management System measures deviations from the existing landscape character, and ecosystems provide the environmental context. With ecosystems providing the context, no specific duration of scenic impacts are assigned to a scenic integrity objective, but rather the focus is on movement toward the desired landscape character (USDA 1995). It should be noted that although specific timeframes are not assigned in the Scenery Management System Handbook, duration of impacts are always considered in site-specific project planning and analysis with the direct intent to provide high quality scenery and achieve the highest scenic integrity possible (USDA 1995). The Scenery Management System also recognizes positive cultural landscapes or cultural scenic attributes where some human alterations have become accepted over time to become expected images or valued features in the landscape contributing to high-quality scenery.

The Scenery Management System, as outlined in Agricultural Handbook 701, is today's best science to achieve high-quality scenery as an outcome of national forest ecosystem management practices. System inventories were completed for the Coronado as part of the forest plan revision process.

The very high, high, and moderate scenic integrity objectives result in a relatively natural-appearing landscape. It is important for national forests to manage scenery at this level. "Research has shown that high-quality scenery, especially that related to natural-appearing forests, enhances people's lives and benefits society" (USDA 1995). It should also be noted that, according to Floyd Newby's findings, "people expect to see natural or natural-appearing scenery," (USDA 1995). Furthermore, "research shows that there is a high degree of public agreement regarding scenic preferences. This research indicates that people value most highly the more visually attractive and natural-appearing landscapes" (USDA 1995).

Gobster (1994) summarizes preferred scenic settings as having four common attributes: large trees; smooth, herbaceous ground cover; an open mid-story canopy with high visual penetration; and vistas with distant views and high topographic relief. Visual access, or how far one can see into a forest, is also a preferred scenic setting (Ryan 2005). In the long term, when these scenic preferences are part of the desired landscape character, scenic resources will have higher scenic quality if visual access is achieved or enhanced.

The 1992 visual quality objectives GIS corporate data layer was reviewed as part of this analysis. The data layer did not always have a direct correlation to Scenery Management System inventories due to differences in handbook direction and how the inventories were completed.

Methodologies used for scenery management mapping on the Coronado National Forest can be found in the Coronado National Forest Scenery Management System Implementation Guide (USDA FS 2013a).

In the analysis for this resource, the following additional assumptions have been made:

- The principles of scenery management and environmental design will be applied in project-level planning in all National Forest System activities.
- Scenery management techniques and principles will be used to mitigate any future site-specific land altering activity or introduced elements on the land, to achieve and maintain desired scenic integrity objectives and landscape character goals.
- Scenery management accomplishments and success of mitigation measures in meeting scenic integrity objectives will be measured. Monitoring will be conducted to determine how projects and programs are affecting scenery.
- Changes in scenery and changes in public expectations related to landscape aesthetics and scenery will be monitored and documented (Forest Service Manual 2382 – Scenery Management). Changes in public expectations related to landscape aesthetics and scenery would most likely be monitored at a regional or national level but may also be assessed during scoping for site-specific projects and review of current research when completing scenery analyses for site-specific projects.

Scenery inventory GIS data layers will be reviewed during future project-level analysis and updated as ground truthing occurs to keep the data layers accurate and relevant.

Designated Areas and Other Special Places

Wilderness

Methods to evaluate potential wilderness areas for future recommendation are in the Coronado National Forest Potential Wilderness Area Evaluation Report and the Potential Wilderness Area Need Evaluation, which are filed in the administrative record of this National Environmental Policy Act review.

Wild and Scenic Rivers

The evaluation process that identified Coronado streams and segments eligible for future listing as wild and scenic rivers is described in the Coronado National Forest Eligibility Analysis for Wild and Scenic Rivers, which is filed in the administrative record of this National Environmental Policy Act review.

Research Natural Areas

Records describing how and when already designated forest research natural areas were established and the evaluation process used to recommended new research natural areas are filed in the administrative record of this National Environmental Policy Act review.

Zoological and Botanical Areas

The analysis focuses on both designated and proposed zoological-botanical areas on the Coronado. These areas are described using information from available literature and from field

visits conducted since the 1986 forest plan became effective. The scientific and research interest and significance is described within this information. Management concerns were also identified.

The alternatives are compared based on how they would protect and preserve the ecological features and conserve the scientific values of these areas. This was a qualitative analysis.

Since the forest plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or carry out any project activity, there are implications or longer term environmental consequences of managing the Coronado National Forest under this programmatic framework. Thus, the focus of this environmental analysis is on the consequences of the alternatives on the desired conditions for the zoological and botanical area resources.

Motorized Transportation

Information related to the forest road system was obtained from the INFRA database of National Forest System roads and the Coronado GIS database. The INFRA database stores many types of tabular data. GIS and INFRA are linked to ensure consistency of both and are updated continually to reflect actual conditions in the field. GIS layers delineating new proposed wilderness areas, special interest management areas, and wildlife habitat management areas were used. The road mileage by operational maintenance level was obtained from INFRA.

Topics 3, 4 and 5: Access; Open Space; and Collaboration, Communities, and Partnerships

Discussion about how these topics were evaluated is in the respective sections for these topics in chapter 3. Additional details about methods and approaches are provided below.

Forest Products

The alternatives were compared on the basis of how they would provide forest product resources to the public. This was a qualitative analysis. Related methodologies are discussed in this appendix and in the text of the environmental impact statement under the headings for vegetation, fuels and fire, communities, and tribal relations.

Heritage Resources and Tribal Relations

Information from the Coronado database, heritage program files, State historic preservation offices, and museums in Arizona and New Mexico was collected and reviewed. These included, but were not limited to, an inventory of known sites, archaeological site densities, and cultural sensitivity of different parts of the Coronado. This information was used to describe current conditions and potential effects on heritage resources.

In order to evaluate the archaeological sensitivity of different parts of the Coronado National Forest, environmental variables such as geological substrate, slope, aspect, existing vegetation, historical vegetation, moisture, and soil type, were considered. These variables are important when considering the relationships between the environment and prehistoric land use patterns.

Areas of traditional cultural importance to modern Southwestern Indian tribes were factored into the determination of overall sensitivity of heritage resources. The degree to which the site

sensitivity was upgraded for cultural sensitivity is based upon the relative traditional importance of an area, as understood by the Coronado National Forest heritage resources staff from various outreach interactions with 12 tribes with ties to southeastern Arizona.

In the analysis of plan direction of each alternative on heritage resources, additional assumptions included (1) analysis and impacts to cultural resources from site-specific actions will be addressed at the time site-specific decisions are made; and (2) populations in Arizona will continue to increase, putting further demands on Coronado National Forest resources that may be incompatible with cultural uses and historic preservation.

Lands and Special Uses

Data and information related to the use of forest lands for permitted special uses were obtained from the Forest Service special uses database, the Coronado National Forest GIS database, special use program records and permit files, and Federal, State and local databases. The special uses database provided the legal coordinates of various special use areas to determine the compatibility of current use with recommended new wilderness and other special areas.

The special uses database provided the type, number, and status of special use authorizations on the forest. Some use codes were combined into the general categories listed in Forest Service Handbook 27091.11, Chapter 50 – Terms and Conditions Use Chart. Current special use authorizations were tallied for applications approved, pending signature, and to be issued contemporaneously with preparation for of this environmental impact statement. Inaccuracies in the database tally include accounting for permits that have expired but remain reported as issued and may not be reissued or closed, and expired permits for which uses are ongoing but are currently not authorized or counted. Short-term permits are not separated from long-term permits in the total authorizations.

Various acreages and miles of specific features and were obtained from the Coronado GIS database. Reviews of private property in relation to proposed wilderness and other special areas used information and data from the counties in which the districts are located and Coronado GIS land ownership files. Suitability of lands on the Coronado for various special uses was determined primarily on the basis of revised forest plan direction for specific management areas and staff on-the-ground experience with administration of special uses over a period of 40 years. Each special use was also evaluated relative to the needs of the public user and resource conditions in each management area.

The columns in table 151 show the suitability of specific management areas for select special use categories. Energy corridors are linear strips of land identified for the present or future location of a utility right-of-way (e.g., above- or below-ground electric transmission line, gas pipeline). Other energy developments include the infrastructure associated with the provision or transport of energy (e.g., dam, biomass power generation, wind turbines, solar panels). Communication sites acceptable on National Forest System lands used are identified in appendix C of the revised forest plan. Motorized outfitter and guide uses are conducted by various types of vehicles and include hunting, fishing, and “ecotours” for wildlife viewing. Military training includes tracking classes, frequency testing, unmanned aerial vehicle use and testing, and downed pilot search and rescue. Treasure trove is the exploration for buried treasure. Department of Homeland Security, Customs, and Border Protection uses include foot, equestrian, vehicle and aerial patrols, vehicle-mounted camera deployment, and forward operating camps.

Table 151. Suitability of select special uses on the Coronado National Forest

Management Area	Energy Corridor	Other Energy	Comm. Site[1] (Excl. DHS)[6]	Motorized Outfitting and Guiding	Military Training	Recreation Event	DHS/CBP Activities[6]
Wild Backcountry	Not suitable	Not suitable	Suitable[1]	Not suitable	Suitable	Suitable	Suitable[3]
Roaded Backcountry	Suitable	Suitable	Suitable[1]	Suitable	Suitable	Suitable	Suitable
Motorized Recreation	Suitable	Suitable	Not suitable	Suitable	Suitable	Suitable	Suitable
Developed Recreation	Not suitable	Not suitable	Suitable[1]	Not suitable	Not suitable	Not suitable	Suitable
Wilderness Area, Wilderness Study Area, and Recommended Wilderness Area	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Suitable[2]	Suitable[3]
Arizona National Scenic Trail (within 1/2 mile)[5]	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Suitable[2]	Suitable[3, 4]
Research Natural Areas	Not suitable	Not suitable	Not suitable	Not suitable	Suitable	Suitable[2]	Suitable[4]
Wet Canyon Talussnail Zoological Area	Not suitable	Not suitable	Suitable[1]	Not suitable	Not suitable	Suitable[2]	Suitable[4]
Mount Graham Astrophysical and Biological Research Area	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Suitable[3, 4]
Appleton-Whittell Research Ranch	Not suitable	Not suitable	Not suitable	Not suitable	Suitable	Suitable[2]	Suitable[4]
Wild Chile Botanical Area	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Suitable[2]	Suitable[4]

1. Communication uses at approved sites only, excluding Department of Homeland Security
2. Approved on a case-by-case basis
3. Nonmotorized use only, helicopter landings at authorized sites.
4. No forward operating camps.
5. Uses that will not substantially interfere with the nature and purposes of the trail.
6. DHS/CBP = Department of Homeland Security/Customs and Border Protection

Social and Economic Analyses

The methodology and approach to the analysis of socioeconomic resources is explained in detail in the "Communities – Environmental Consequences" section in the final environmental impact statement.

Livestock Grazing

The alternatives were compared on the basis of how they would affect management of livestock grazing on the forest. This was largely a qualitative analysis for most effects under all alternatives.

In the analysis for this resource, the following assumptions were made:

- Market demands for livestock products are highly variable. We assumed current market demands for livestock products would continue through the next several decades with a continuing demand for grazing of the National Forest System lands.
- Livestock grazing use would be authorized dependent on forage availability.
- The Arizona Game and Fish Department manages populations of big game (i.e., mule deer, elk, pronghorn antelope, and bighorn sheep).