

Clear Creek 820, LLC Land Exchange

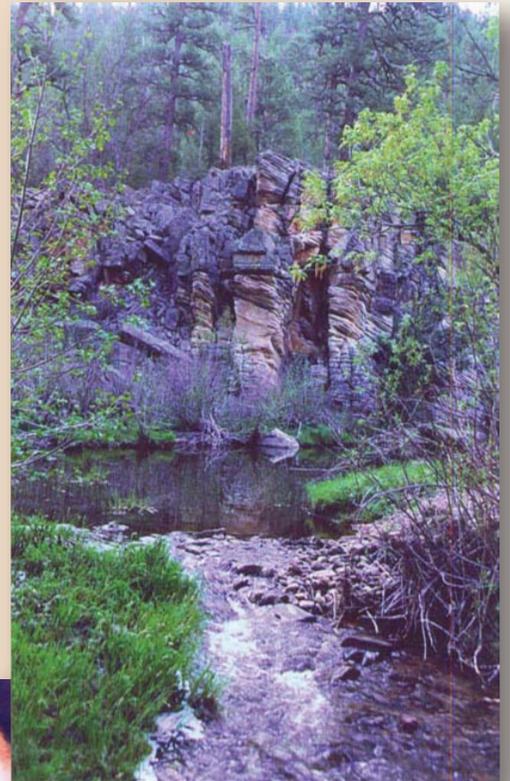
Draft Environmental Assessment

Prepared for:

United States
Department of
Agriculture

Forest Service

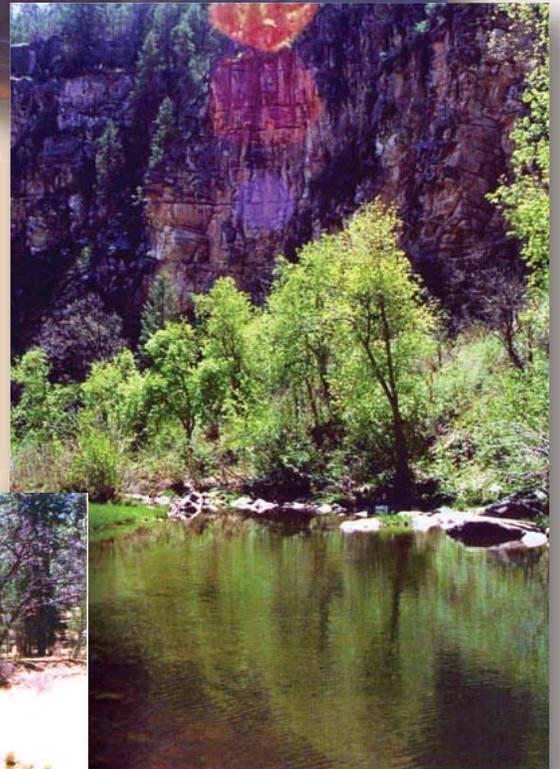
Coconino National Forest



Prepared by:

EnviroSystems Management, Inc.

Environmental Planning · Regulatory Compliance



March 2007

CLEAR CREEK 820, LLC LAND EXCHANGE
DRAFT ENVIRONMENTAL ASSESSMENT

Prepared for

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EnviroSystems Management Project and Report No. 1076-04

March 2007

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CHAPTER I. PURPOSE AND NEED FOR ACTION

This chapter establishes the purpose, need, location, and nature of the proposed action, and provides information on procedural considerations, public involvement, concerns and opportunities identified during the scoping process, and the decision to be made.

INTRODUCTION

The objective of this environmental assessment (EA) is disclosure of environmental effects of the proposed Clear Creek Land Exchange. The Forest Service is considering this proposal under the authorities of the General Exchange Act of March 1922 [PR#3], the Federal Land Policy and Management Act of October 1976 (as amended) [PR#10], the Federal Land Exchange Facilitation Act of August 1988 [PR#20] and the Weeks Act of March 1, 1911 [PR#1].

The National Environmental Policy Act (NEPA) process for this exchange includes the following steps: conduct public scoping and identify issues, develop alternatives and mitigation to address issues and to achieve objectives, analyze and disclose the effects of alternative implementation on issue resolution and objective attainment in an EA, solicit public review and comments, select an alternative that has the most overall public benefit, and publish a Decision Notice. The law requires that land values be equal or nearly equal on both sides as determined by an agency approved appraisal. Cash equalization is permissible within set limits if values are slightly unequal. Final values for this proposed exchange, if completed, will be disclosed in the Decision Notice.

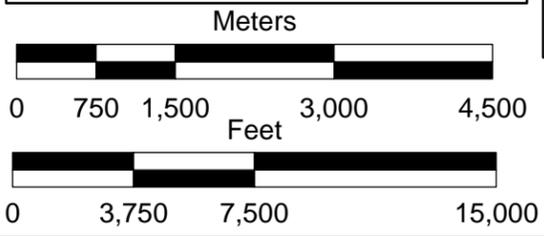
This land exchange was formally proposed by Clear Creek 820, LLC in January 2004 and was formally accepted by the Coconino National Forest (CNF) in August 2004. The proposal would exchange approximately 500 acres of CNF land for approximately 821 acres of private land. Both parcels are located within the Mogollon Rim Ranger District. The proposed exchange lands are shown in Figures 1, 2, and 3. Access directions and physical descriptions of the parcels are provided below.

The CNF parcel is located approximately 55 miles southeast of Flagstaff. It is adjacent to Forest Highway 3 (FH 3) approximately 1 $\frac{3}{4}$ miles north of the junction of FH 3 and State Route 87 (SR 87; Clint's Well). The parcel is partially bisected by FH 3 which is a paved highway maintained by Coconino County on a year-round basis. The land is mostly forested with ponderosa pine with some mixed-conifer. The topography is generally level with slight variation provided by some small drainages having less than 40% slopes. Previous use of this land included surface mining for manganese ore which involved about half of the land area. The parcel contains 1.6 miles of intermittent stream and two tanks totaling 1.6 acres. Contiguous to this parcel are two private land parcels; 1 acre and 82 acres, respectively (Figure 2).

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Clear Creek Land Exchange Parcels

Figure 1. Map showing the locations of federal & non-federal lands proposed for exchange.



Legend

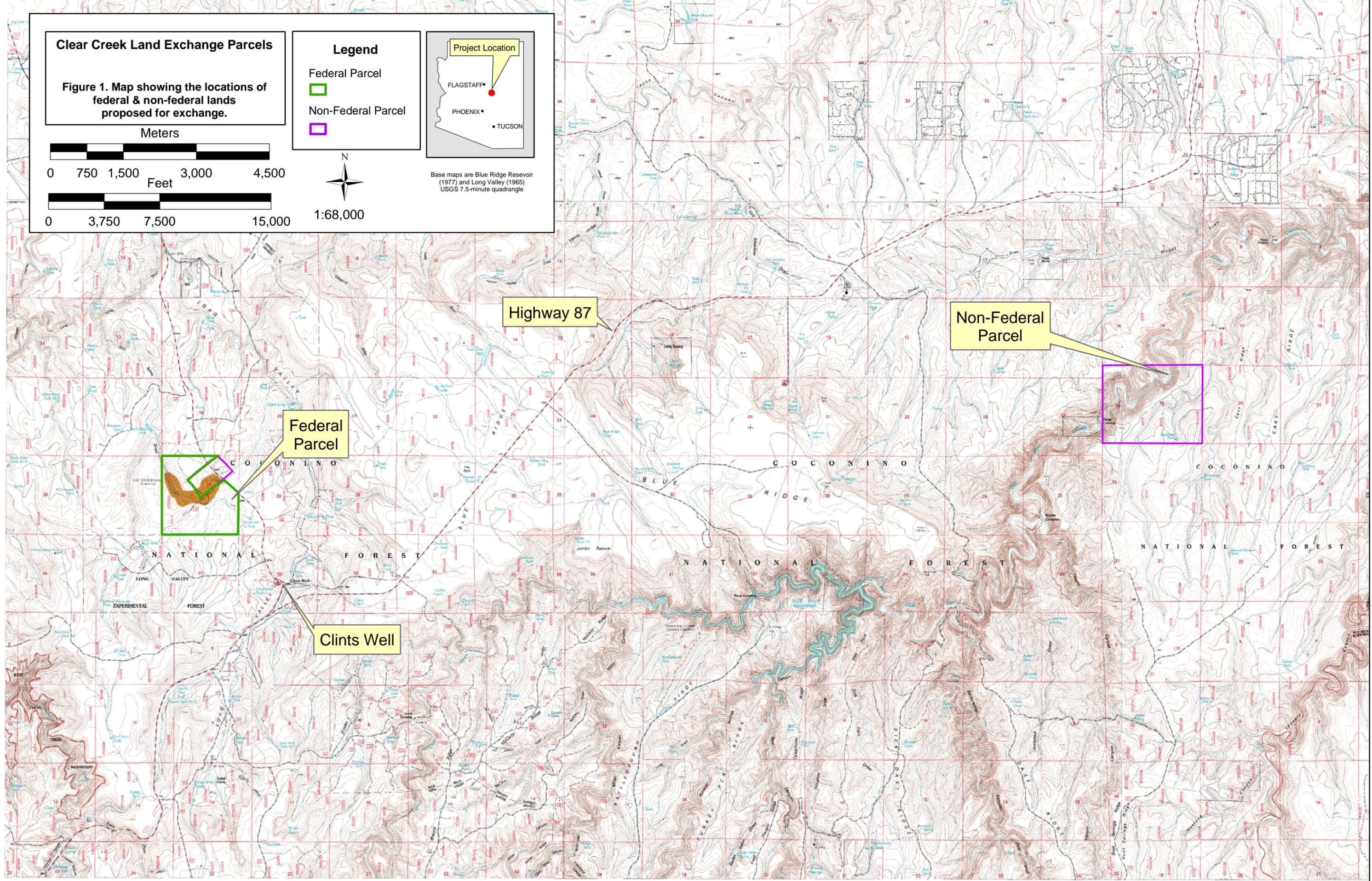
- Federal Parcel (Green outline)
- Non-Federal Parcel (Purple outline)

1:68,000

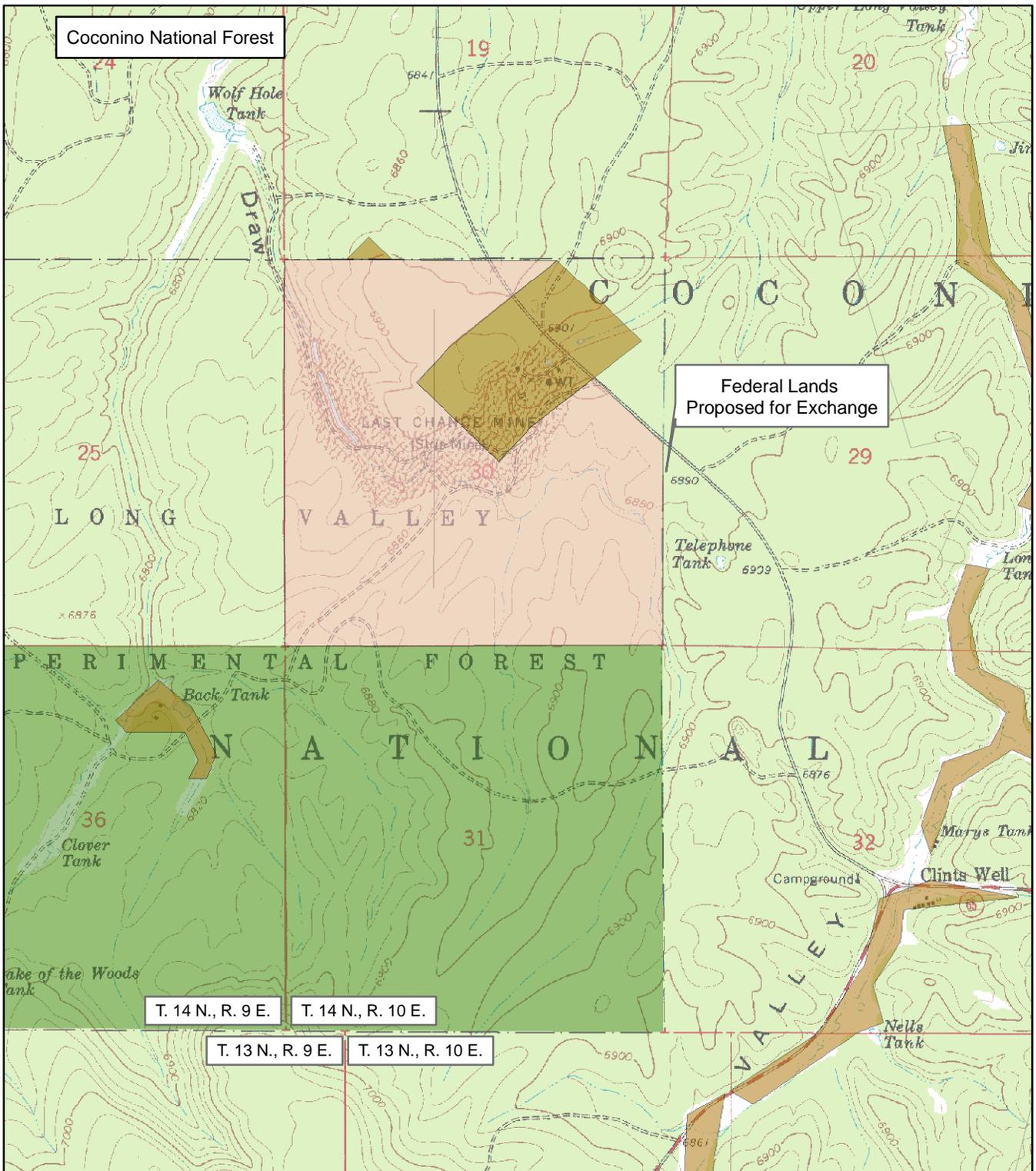
Project Location

FLAGSTAFF
PHOENIX
TUCSON

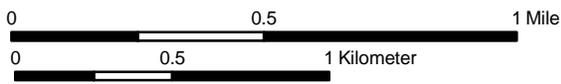
Base maps are Blue Ridge Reservoir (1977) and Long Valley (1965) USGS 7.5-minute quadrangle



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Clear Creek Land Exchange
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Figure 2. Map showing the location of Federal lands proposed for exchange.



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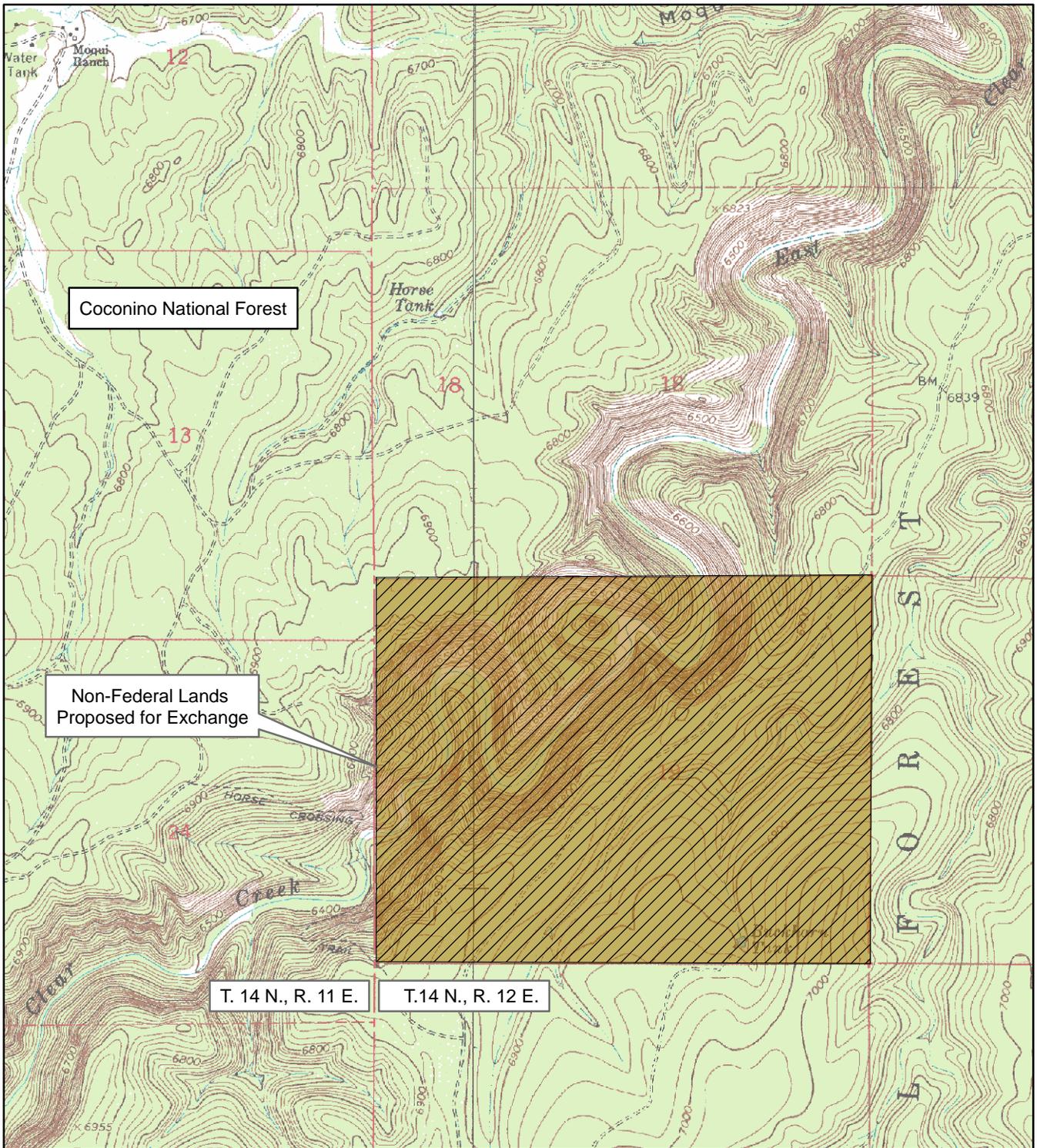
Legend

- Last Chance Mine Tract
- Non-Federal Land
- Long Valley Experimental Forest

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Base map is Long Valley, AZ (1965), USGS 7.5' quadrangle, UTM Zone 12N, NAD 1927.

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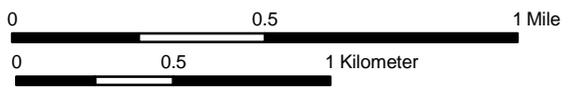
Clear Creek Land Exchange
 EnviroSystems Project No. 1076-05
Figure 3. Map showing location of non-Federal lands proposed for exchange.

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Legend

 Non-Federal Land



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Base maps are Blue Ridge Reservoir and Leonard Canyon, AZ (both 1965), USGS 7.5' quadrangle, UTM Zone 12N, NAD 1927.

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The non-Federal land is located approximately 12 air miles east of the Federal parcel. Access to this parcel is by traveling 10 miles east on SR 87 from its junction of FH 3 and turning south just past the Blue Ridge Ranger Station onto FR 95. The parcel is bisected by the East Fork of Clear Creek, a perennial stream course and canyon. The land on the north side of the East Fork of Clear Creek can be accessed by traveling south on FR 95 for approximately 4 miles turning east onto FR 513 B (merge with FR 513) for approximately 3 more miles. The land on the south side of the East Fork of Clear Creek can be accessed by traveling south on FR 95 for approximately 6 miles, then turning left onto FR 96 for approximately 4 miles then turning left onto FR 137 for approximately 1.5 miles then onto FR 137 for approximately 3 miles. FR 137 transects the parcel.

The private land parcel consists of an enlarged (820 acre) legal section of private land which is surrounded by National Forest. It includes approximately 2 miles of the East Clear Creek, a perennial stream, plus 2 miles of intermittent stream which drain to East Clear Creek. The topography and vegetation on this parcel are diverse. Steep slopes formed from limestone comprise the canyon encompassing the creek. About 1/3 of the acreage is estimated to be too steep for building construction and other general use. The remaining land is generally level with some topographical relief provided by side drainages to the creek. Vegetation in the canyon is primarily mixed-conifer consisting of Douglas fir, and ponderosa pine with a few junipers on the south facing slopes. Adjacent to the creek are approximately 24 acres of riparian stream floodplain represented by a sedge/willow/alder community. Pine-oak with mixed-conifer are located on the northwestern side of the creek. The level area south of the creek and above the canyon is predominately ponderosa pine (see Appendix A).

From this point forward in this document, the private land proposed for acquisition into the National Forest System is referred to as the “**non-Federal land**” while National Forest System land proposed for private acquisition is referred to as the “**Federal land.**”

FOREST PLAN CONSISTENCY

The CNF Land and Resource Management Plan (LRMP; CNF 1987) [PR#20] provides criteria for lands offered by the United States for exchange and acquisition by the United States. This exchange is consistent with the CNF Plan.

The non-Federal land proposed for the exchange has many desirable natural resource attributes, many of which are associated with the presence of the East Fork of Clear Creek. Acquisition of this land will specifically meet at least three plan criteria for acquisition lands within areas having large non-Forest ownership: --“Acquire into Forest ownership to achieve cost efficient management of Forest lands and to maintain them as Forest type lands;” --“Pursue acquisition where special resource needs such as key wildlife habitat or key public recreation sites are identified;” --“Acquire riparian habitat, where adjacent riparian areas are in Forest ownership” (LRMP, Standards and Guidelines, page 86) [PR#20].

The Federal land in this proposed exchange specifically meet at least two or more plan criteria for lands to be offered by the United States including: --“Lands needed to meet the needs of expanding communities;” --“Lands that will improve management, benefit specific resources, or increase management efficiency” (LMRP, Standards and Guidelines, page 86) [PR#20].

The CNF land proposed for the trade is located adjacent to FH 3 and a developed, private parcel existing within the same legal Section. The land is within LRMP Management Area (MA) 3. MA 3 emphasizes a combination of multiple uses including a sustained yield of timber and firewood production, wildlife habitat, livestock grazing, high quality water, and dispersed recreation. This management area consists of ponderosa pine (*Pinus ponderosa*) and mixed conifer forest with slopes less than 40 percent. Ponderosa pine is the CNF’s largest commercial timber type with logging, grazing, firewood gathering, hunting, and recreation comprising the historic uses. These areas typically have many roads. The mixed conifer is variable and consists of overstories and understories of ponderosa pine, Douglas fir, and aspen in a wide variety of mixtures. Dry and wet meadows are interspersed throughout the area. MA 3 provides key habitat for many species of wildlife because of there is a diversity of cover and food production. The meadows provide an important source of food for domestic livestock.

The non-Federal land proposed for acquisition would be incorporated into the adjacent CNF-managed land which includes LRMP MAs 3 and 12. MA 3 has been described in the previous paragraph. MA 12 contains riparian and open water areas, and management of these areas emphasizes wildlife habitat, visual quality, fish habitat, and watershed conditions on the wetlands, riparian forest, and riparian scrub which typically exist. Riparian areas usually occur in the transition between aquatic and terrestrial ecosystems and have distinct vegetation and soil characteristics. These areas are distinguished by the presence of free water within the common rooting depth of native perennial plants during at least a portion of the growing season. Riparian areas are critical for multiple-use management because they are: highly productive with regard to vegetation; increase forest diversity; meet the basic requirements for wildlife habitat of food, cover and water; scenic; not conducive to road construction; and provide wildlife corridors.

In addition to consistency with the LRMP, there are other federal laws and executive orders pertaining to project-specific planning and environmental analysis on Federal land. Many of the environmental laws only require formal surveys of the Federal land. Because of the cost of these surveys they are not usually done for the non-Federal lands; however if there is information known about similar attributes of the non-Federal land it is displayed in the analysis. A partial list of these laws and orders is shown below. Disclosures and findings required by these laws, as applicable, are contained in Chapter 3.

- ~ National Environmental Policy Act of 1969, as amended
- ~ National Historic Preservation Act of 1966, as amended
- ~ Multiple Use – Sustained Yield Act of 1960
- ~ Clean Air Act of 1970, as amended
- ~ Endangered Species Act of 1973, as amended

- ~ Forest and Rangeland Renewable Resources Planning Act of 1974, as amended
- ~ Federal Land Policy and Management Act of 1976
- ~ National Forest Management Act of 1976, as amended
- ~ Clean Water Act of 1977, as amended
- ~ American Indian Religious Freedom Act of 1978
- ~ Comprehensive Environmental Response, Compensation and Liability Act of 1980
- ~ Archaeological Resource Protection Act of 1980
- ~ Federal Cave Resources Protection Act of 1988
- ~ Federal Land Exchange Facilitation Act of 1988
- ~ Native American Graves and Repatriation Act (1990)
- ~ Executive Order 11593 (cultural resources)
- ~ Executive Order 11988 (floodplains)
- ~ Executive Order 11990 (wetlands)
- ~ Executive Order 12898 (environmental justice)
- ~ Executive Order 12962 (aquatic systems and recreational fisheries)
- ~ Executive Order 13186 (Migratory Bird Treaty Act)

PURPOSE AND NEED FOR ACTION

Land exchange is one process the Forest Service uses to acquire threatened wetlands, wildlife habitat and other important lands for public purposes. The National Land Acquisition Plan of the U.S. Department of Agriculture (February 2005) [PR#82] identifies two agency objectives related to Forest Service land acquisition program which were displayed in the Forest Service Strategic Plan for Fiscal years 2004 - 2008: 1) Maintain the environmental, social, and economic benefits of forests and grasslands by reducing their conversion to other uses. 2) Improve public access to Forest Service land and water and provide opportunities for outdoor health-enhancing activities. Specific objectives for land exchange in that Plan which will be met by this exchange include: Protection of fish and wildlife habitat, enhancement of recreation opportunities and public access, consolidation of lands or interests in land for more logical and efficient management and development, expansion of communities, promotion of multiple use values, implementation of Forest Plans and the fulfillment of public needs.

The objective of the overall land exchange program, in concert with the land purchase program, is to implement Forest Land and resource management plan direction; to optimize National Forest System landownership patterns; to further resource protection and use; and to meet present and future needs of the American people. The initial screening of this land exchange has indicated that it is consistent with these objectives and is in the public interest. The non-Federal land offered for exchange is land which the Forest feels is a very desirable acquisition. Land exchange is the preferred method of acquisition due to the limited availability of land purchase funds.

This land exchange is needed to acquire a private, undeveloped parcel, which is completely surrounded by the CNF, to ensure public access to specific natural resources, protect key wildlife habitat including habitat for endangered and threatened species, and

facilitate improved administration and management of CNF resources. While the Federal land proposed to be exchanged is generally representative of much of the adjacent National Forest, the non-Federal land contains unique natural resources and is the ecologically preferable parcel.

The land proposed to be acquired is seen as an excellent acquisition into public ownership. Natural resource attributes of this land are notable. It includes approximately 2.1 miles of East Clear Creek, a valuable perennial stream which provides important habitat for fisheries, wildlife and human benefits. It provides important habitat for all of the local wildlife species, including a large number of elk, deer and turkey. The land includes high quality habitat for the endangered Southwestern willow flycatcher and three threatened species, the Bald eagle, Mexican spotted owl, and Little Colorado spinedace. Grass meadows and riparian areas adjacent to East Clear Creek provide excellent spring foraging areas for deer, elk, and antelope. Public recreation opportunities which would be afforded on this land include hunting, fishing, wildlife viewing and hiking. Upland portions of the section are ponderosa pine forest and would be included in the potential timber and fuel wood base. Both wetlands and floodplain are on the non-Federal parcel. If subsequent analysis proves that grazing would be beneficial to the management of the parcel's resources, portions of the land may be added to the permit areas of the existing, adjacent cattle grazing allotments.

The objectives for MAs 3 and 12 are consistent with the purpose and need for the proposed land exchange and the characteristics of the non-Federal parcel described above.

BACKGROUND

Preliminary discussions about a potential land exchange were initiated by the proponents prior to their purchase of the non-Federal land in the spring of 2002. At that time Coconino Forest and Mogollon Ranger District personnel identified the non-Federal land as a very desirable parcel for the Forest to acquire. Subsequent discussions and meetings between the proponents and the Mogollon District identified potential Federal lands for the exchange. An initial exchange proposal was made in June of 2002. After receiving some feedback from the Forest, that proposal was revised to reflect the lands currently under consideration.

PROPOSED ACTION

The CNF proposes to exchange lands with Clear Creek 820, L.L.C. under authority of the General Exchange Act of March 20, 1922 [PR#3], the Federal Land Policy and Management Act of October 21, 1926 (as amended) [PR#11], the Federal Land Exchange Facilitation Act of August 20, 1988 [PR#21] and the Weeks Act of March 1, 1911 [PR#1]. The proposed land-for-land exchange would result in CNF acquisition of approximately 820 acres and conveyance of approximately 500 acres into private ownership. Any appurtenant water and mineral rights associated with the respective properties will be conveyed.

DECISION TO BE MADE

The decision to be made is whether to retain the lands currently under CNF management, to modify the proposal, or to authorize the land exchange as proposed. The Regional Forester, Southwestern Regional Office, or his/her designated representative is the official who will make the decision.

PUBLIC INVOLVEMENT

A mailing list was compiled of federal, state, and local agencies, as well as individuals and organizations interested or determined to be potentially impacted by the proposed land exchange. Emphasis was placed on contacting people affected or concerned about the proposed land exchange due to ownership or land-use interests. Scoping documents that included a discussion of the proposed land exchange, maps showing the CNF and Clear Creek 820, L.L.C. lands, notice of a public meeting, and a scoping comment form were initially sent to over 1,100 individuals, organizations, agencies, and tribes on the mailing list [PR#103 & 132]. Announcements of the proposed action were posted on the CNF and U. S. Forest Service (USFS) websites and published in the High Country Informant and Arizona Daily Sun [PR#116 & 124]. The scoping documents were sent to over 200 additional individuals and organizations identified as a result of the initial mailing and public announcements. All effected special use authorization holders including the grazing permittee, were notified in writing of the proposal. Thirteen Native American Indian groups were notified of the project. The scoping period was from October 25 to December 4, 2005.

An “open house” style public meeting was held at the Happy Jack Lodge on Saturday, November 19, 2005, to review and discuss the exchange proposal with interested parties. Seventeen members of the general public attended the meeting [PR#112].

CNF sent an acknowledgement letter to all individuals and groups who provided written comments and responded to emails commenting on the proposed action [PR#154]. A total of 36 comments were received by the CNF during the period from November 10, 2005 to April 10, 2006, as a result of mailing the scoping documents, publishing the public notice, and hosting the public meeting [PR#149]. Seventeen of the comments regarding the land exchange were favorable. Three responders requested additional information. Topics and concerns addressed in the remaining comments included clarification of the purpose of the exchange, future development of the Federal lands, wildfire related concerns, recreation impacts, effects on traffic, noise, grazing, and changes to the area’s soil, vegetation, wildlife, and water resources.

The Federal land value in this exchange is expected to exceed \$500,000. As required by the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999, a 30-day review period will be provided to the House and Senate Appropriations Committees. Federal land to be conveyed under the authority of the Weeks Act is expected to exceed \$250,000 in value and will require approval by the Secretary of Agriculture.

ISSUES

Comments resulting from the initial scoping were evaluated by the CNF interdisciplinary team (IDT) to identify significant issues. Significant issues are those directly or indirectly caused by implementing the proposed action and typically result in the creation of additional alternatives, increased analysis or the implementation of mitigation measures. No significant issues were identified during the scoping process. Non-significant issues are identified as those:

- outside the scope of the proposed action;
- already decided by law, regulation, LRMP, or other higher level decision not to be significant;
- irrelevant to the decision to be made;
- conjectural and not supported by scientific or factual evidence; or
- significantly limited in geographic area, time (duration) or level of public interest

Non-significant issues were identified by the IDT and from public comments received. These issues are presented and analyzed in Chapter 3. All public comments received are summarized in Appendix B. However, because the most important aspect of the comments received centered around the level of public interest in future development potential of the subject lands (both Federal and non-Federal parcels) under private ownership, increased analysis of this topic was carried forward in the evaluation process.

AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT

The Draft Environmental Assessment (EA) is available at the Mogollon Rim Ranger District and on the Internet at the following addresses:

Mogollon Rim Ranger District www.fs.fed.us/r3/coconino/nepa/index.shtml
HC 31 Box 300
Happy Jack, AZ 86024
(928) 477-2255

For information, contact Carol J. Holland at the above address or by email at cjholland@fs.fed.us.

CHAPTER II. ALTERNATIVES

This chapter describes the proposed action and alternatives to the proposed action, including the “No Action” alternative.

ALTERNATIVE DEVELOPMENT

The range of alternatives is somewhat limited by the unique nature of the exchange process itself. A proposed exchange package is typically arrived at through discussions and negotiations which result in a balanced mix of parcels acceptable to both parties. When an acceptable mix of lands is agreed upon by both parties, the Federal agency initiates action to go forward with an analysis of that action. Other alternative options were reviewed by an IDT at the initiation of the environmental analysis process. The exchange proposal analyzed in this document displays lands mutually agreed upon by the non-Federal landowner and the CNF.

ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER ANALYSIS

Other means of acquiring the non-Federal lands were considered but were eliminated from further study. Options to a land exchange are fee purchase or accepting donation of the non-Federal lands to the United States. Funds to purchase this privately-owned parcel are presently not available and funding for land purchases is expected to be very limited in the foreseeable future. The landowners have indicated they do not want to sell or donate their lands, but wish to receive lands of equal value to those which they propose to convey to CNF.

A potential alternative applying one or more deed restrictions to the Federal parcel in order to limit development was suggested and discussed. It was decided there was no overriding need for special restrictions to protect adjacent National Forest System Lands. Any major restriction of use would also be expected to devalue the land such that the exchange as proposed would no longer be viable.

ALTERNATIVES CONSIDERED IN DETAIL

Alternative A—No Action

Under this alternative, no exchange of land would occur. The Federal parcel would remain under CNF management. Forest management would remain consistent with the objectives set forth in the LRMP for MA 3. The non-Federal parcel would remain under private ownership and would likely be developed into a residential subdivision.

Alternative B—Proposed Action

The CNF is considering a proposed land exchange with Clear Creek 820, L.L.C. The proposal is to exchange approximately 500 acres of CNF land for approximately 820 acres of private land, both located within the Mogollon Rim Ranger District. The land exchange would result in CNF acquiring a private, undeveloped parcel, which is completely surrounded by the CNF, ensuring public access to specific natural resources, protecting key wildlife habitat including habitat for endangered and threatened species, and facilitating administration and management of CNF resources. Clear Creek 820, L.L.C. would receive approximately 500 acres of CNF land adjacent to a partially developed, privately-owned parcel contiguous to FH 3. It is estimated that surface mining has taken place on almost half of the lands comprising the Federal parcel. Photodocumentation of both parcels is provided in Appendix A.

ALTERNATIVE COMPARISON SUMMARY

Below is a table comparing the alternatives considered in detail in this EA.

Table 2.1 Comparison of Alternatives

	ALTERNATIVE A NO ACTION	ALTERNATIVE B PROPOSED ACTION
Federal Land	The 500-acre Federal parcel would continue to be managed by the CNF in accordance with Standards and Guidelines contained in the LRMP.	The 500-acre Federal parcel would likely become a residential community.
Non-Federal Land	The 820-acre parcel would remain in private ownership and may become a residential community.	The 820-acre private parcel would be managed by the CNF in accordance with Standards and Guidelines contained in the LRMP.

CHAPTER III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This Chapter describes the present environment within the areas proposed for exchange, and the direct, indirect and cumulative environmental consequences of implementing the alternatives described in Chapter 2. Mitigation measures that could reduce or prevent adverse impacts identified during the impact analyses are also identified.

LAND USE AND INFRASTRUCTURE

Affected Environment

The Federal and non-Federal parcels are currently undeveloped.

Federal Parcel: Mining has taken place on approximately half of the Federal parcel. The Federal parcel abuts a commercial development consisting of a lodge and recreational vehicle resort (Happy Jack Lodge and RV Park), and FH 3 (a County maintained highway) passes through the extreme northeastern portion of the property. Current land use for the Federal parcel consists of CNF typical Forest activities such as livestock grazing, dispersed recreation and wildlife use.

Non-Federal Parcel: The non-Federal land is completely surrounded by the CNF. The property provides habitat for all of the local wildlife species, a number of threatened, endangered, and sensitive species, and contains riparian areas adjacent to East Clear Creek which crosses the northwest portion of the property. Current land use for the non-Federal land includes mainly wildlife use, however the landowners have indicated that they are considering residential development of the parcel should this exchange not occur.

Environmental Consequences

During public scoping for this exchange several individuals expressed an interest in the intended use of the Federal parcel if the exchange is completed. Comments were also received questioning whether or not the non-federal lands were suitable for development. In response to this input and in order to more accurately compare and depict the action and no-action alternatives, reasonably foreseeable development scenarios have been developed for both the federal and non-federal lands. Reasonable foreseeable use is defined as a future use of the subject parcels which would likely occur under private ownership. In the case of private land ownership this use is most often some type of development. Development of credible scenarios began by looking at the current zoning in Coconino County applicable to the subject parcels, then designing what the likely development would look like under current zoning status. Additional analysis was performed based on possible zoning changes to the parcels to increase density, but which were still reasonable changes that could likely occur. Items taken into account during the exercise were existing infrastructure (roads, utilities, etc.), location, similar

developments, and zoning laws governing lot sizes, open-space requirements and costs associated with the infrastructure improvements. The Coconino County Development Department was then consulted on the reasonable foreseeable use maps and calculations in order to confirm that the analysis had produced results that the County could agree were likely development scenarios. From this exercise a set of maps (Figures 4 & 5) were produced showing, in general terms, the potential development which would occur under the two alternatives as well as calculations of lot sizes, density, and open space. The reasonable foreseeable use maps are meant to show the reader likely private development scenarios which could occur under each alternatives. Lands remaining under the jurisdiction of, or acquired by, the Forest Service would be managed for public purposes and would not be developed. These four scenarios were created specifically for the analysis of this document, and are not formal plans for development. The decision to be made remains the approval or denial of the land exchange.

ALTERNATIVE A – NO ACTION

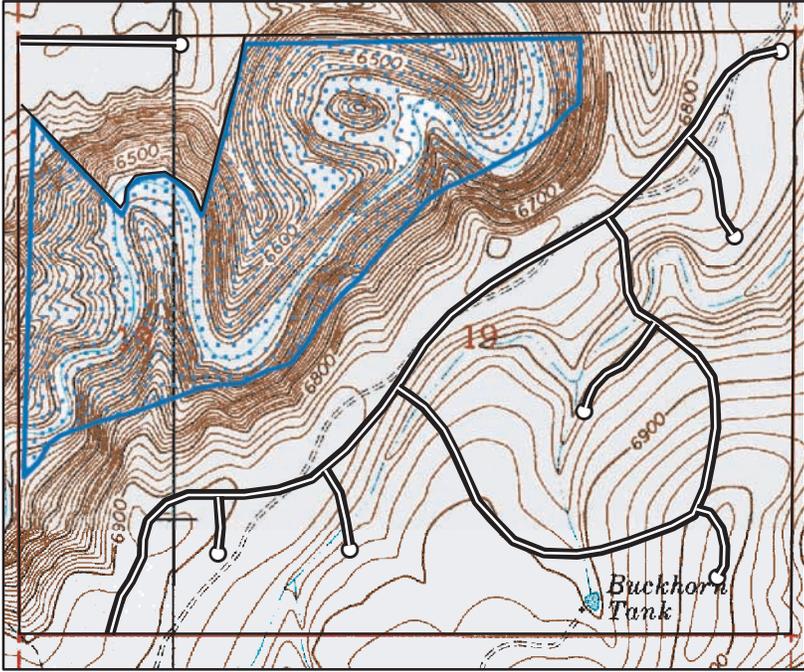
Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not occur and the 820 acre non-Federal parcel would likely be developed into residential home sites. The reasonable foreseeable use of the property is shown in Figure 4a and 4b. These options have been developed from the reasonable foreseeable use exercise and discussions between the developer and County officials as discussed above. Non-Federal parcel Conceptual 82 Unit Plan in Figure 4a shows this development scenario following current zoning limitations. Under current Coconino County zoning regulations governing the property, it could be developed with lot sizes of approximately 4-10 acres with 213 acres of open space. However, it was identified that it would be possible to petition the County for smaller lot sizes allowing greater residential density. Non-Federal parcel Conceptual 471 Unit Plan in Figure 4b shows a likely development scenario with smaller lot sizes. The non-Federal development options range from approximately 82 to 471 residential units.

The primary result of this development would be those related to high density human occupancy and use impacts on 500 to 600 acres of what is presently undeveloped, highly diversified, forested land and riparian area. Open space on the parcel following development would range from approximately 200 to 300 acres, mainly around Clear Creek. Infrastructure to support the development would include utilities and improved access and would be required under the reasonable foreseeable use non-Federal parcel for any development plan. Primary land use would change from wildlife habitat to residential. Major road upgrades would be necessary as discussed in another section of this EA.

Figure 4a. Conceptual 82 Unit Plan:
 Non-Federal Parcel
 Parcel Size: 820 acres
 Total Units: 82
 Lot Size: 4-10 acres
 Open Space: 213 acres



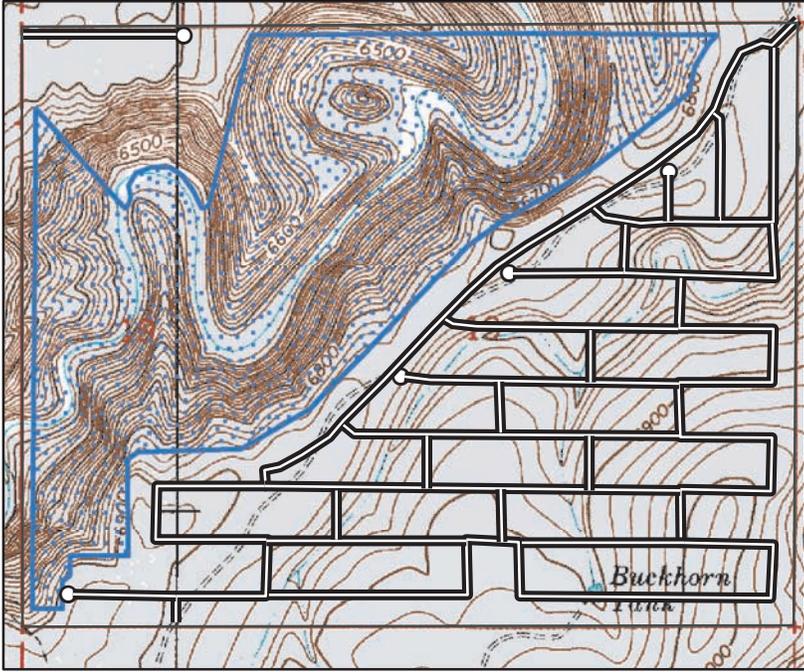
Legend

 Open Space
 Roadways

N


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Figure 4b. Conceptual 471 Unit Plan:
 Non-Federal Parcel
 Parcel Size: 820 acres
 Total Units: 471
 Lot Size: 0.7 acres +/-
 Open Space: 295 acres



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Cumulative Effects

There are no known actions that, in conjunction with the development of the non-Federal parcel, would result in substantial impacts regarding infrastructure and land use. Development of the non-Federal parcel would add to the existing private land developments in the vicinity, a few miles north of the project area. However, Coconino County growth guidelines would continue to regulate the development process in the area and their zoning regulations would prohibit substantial cumulative land use impacts.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. The reasonable foreseeable use of the property is shown in Figures 5a and 5b. Federal parcel Conceptual 41 Unit Plan in Figure 5a shows the likely development scenario following the current zoning limitations. Under the current Coconino County zoning regulations, the property could be developed with a lot size of 10 acres. It is possible to petition the County for smaller lot sizes allowing greater residential density. Federal parcel Conceptual 493 Unit Plan in Figure 5b shows a likely development scenario with smaller lot sizes. The Federal parcel development options range from approximately 41 to 493 residential units.

The primary impact of the development would be a change in land use for the approximately 430 to 470 acres of forested land currently managed by the CNF for timber and firewood production, wildlife habitat, livestock grazing, and dispersed recreation to residential. Open space on the parcel following development would range from approximately 27 to 60 acres. Infrastructure to support the development would include utilities and improved access. Access is addressed in the roads discussion of this EA. Electrical power would likely involve a substation and extension of power from the adjacent commercial property.

Non-Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP MAs 3 and 12 and subsequent plans for the area.

Cumulative Effects

There are no known actions that, in conjunction with the development of the Federal parcel, would result in substantial impacts regarding infrastructure and land use. Development of the Federal parcel would add to the existing private land developments in the vicinity, immediately surrounding the project area. However, Coconino County growth guidelines would continue to regulate the development process in the area and their zoning regulations would prohibit substantial cumulative land use impacts.

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Figure 5a. Conceptual 41 Unit Plan:
 Federal Parcel
 Parcel Size: 500 acres
 Total Units: 41
 Lot Size: 10 acres+
 Open Space: 27 acres

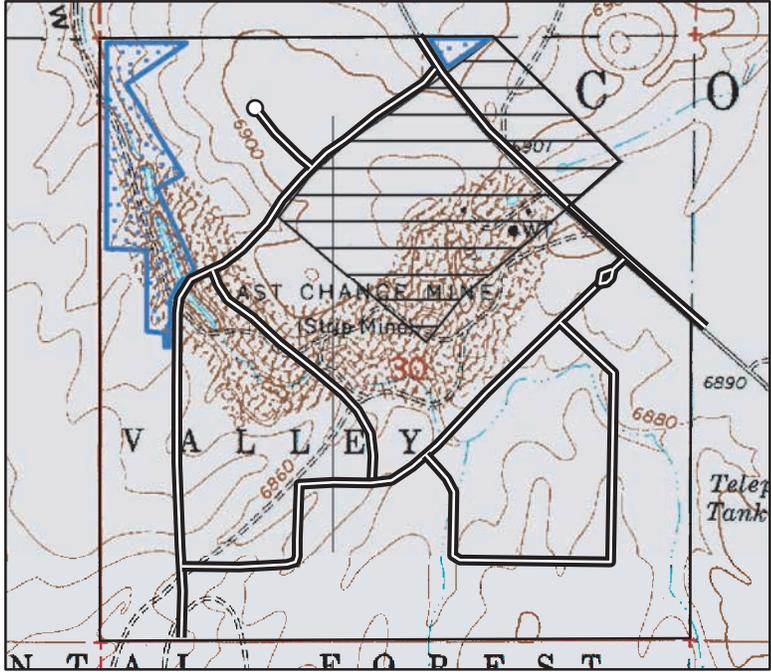
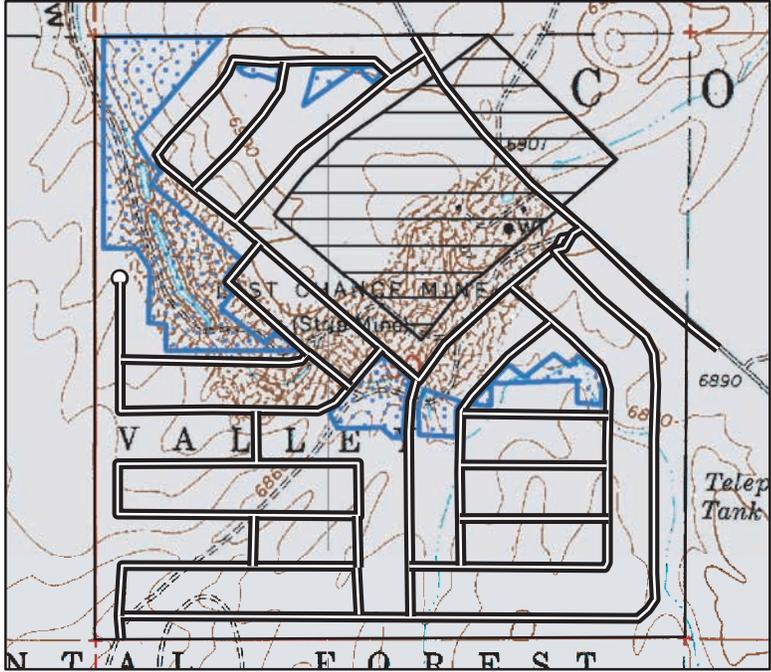


Figure 5b. Conceptual 493 Unit Plan:
 Federal Parcel
 Parcel Size: 500 acres
 Total Units: 493
 Lot Size: 0.7 acres +/-
 Open Space: 60 acres



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AIR QUALITY

Affected Environment

The areas proposed for exchange are attainment areas with respect to National Ambient Air Quality Standards (ADEQ 2006) [PR#140a]. Attainment areas have no recorded violations of the federal health standards for ambient air quality. Non-attainment areas are those that do not meet National Ambient Air Quality Standards. Lands designated as Class I areas are afforded the highest level of protection from air pollutants and consist of national wilderness areas, parks, and wildlife refuges. All other areas including the subject parcels are designated as Class II airsheds. The closest Class I area is the Mazatzal Wilderness, approximately eight miles west of Payson, and approximately 30 and 40 miles southwest of the Federal and non-Federal lands, respectively.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. Construction activities would result in a temporary increase in fugitive dust emissions, which can be largely mitigated through regular watering of the construction areas. Exhaust emissions from construction equipment can be reduced through routine maintenance. Following construction, increased traffic, emissions from stationary sources such as woodstoves, and recreational use of neighboring CNF lands would degrade air quality in the immediate vicinity of the developed parcel. County policies encourage the design of the development with trails for non-motorized travel and dust-free surfaces to limit air quality impacts (Coconino County 2003) [PR#73a].

Since development would be limited to the existing non-Federal land and would likely consist of residential structures, the No Action Alternative is not expected to result in non-attainment of air quality standards.

Cumulative Effects

There are no foreseeable actions that, in conjunction with the likely development of the non-Federal land, would result in non-attainment of air quality standards. No cumulative effects would occur.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would take place and development would likely occur on the Federal land with results similar to those described under Alternative A for the non-federal parcel. Construction activities would result in a temporary increase in fugitive dust emissions, which can be largely mitigated through regular watering of the construction areas. Exhaust emissions from construction equipment can be reduced through routine maintenance. Following construction, increased traffic, emissions from stationary sources such as woodstoves, and increased recreational use of neighboring CNF lands would degrade air quality in the immediate vicinity of the developed parcel. However, development of the Federal parcel would not cause non-attainment of air quality standards and would be governed by County policies to prevent or limit air-quality impacts.

Non-Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP MAs 3 and 12 and subsequent plans for the area. Air quality standards would be expected to be met.

Cumulative Effects

There is commercial development adjacent to the Federal land. Unlike Alternative A, increased commercial development may occur in conjunction with residential development on the Federal land. However, such development would not be unlimited and would be confined to the adjacent, private land. Residential development of the Federal land and any associated expansion of commercial activities on the adjacent, private land, are not expected to cause non-attainment of air quality standards. No cumulative effects to air quality would occur.

VEGETATION

Non-Special Status Species

Affected Environment

Both the Federal and non-Federal parcels are within the cold-temperate coniferous forests of the Southwest.

Federal Parcel: The forest stand on the Federal parcel consists primarily of even-aged ponderosa pine with a few interspersed Gambel oak (*Quercus gambelii*) located on the northwest portion of the parcel. The ponderosa pine trees range in diameter from seedlings to diameters at breast height (dbh) up to 18 inches; however, the majority of the trees are between 5 and 12 inches dbh (EnviroSystems 2007) [PR#172 & 173]. The understory is comprised of a variety of native grasses with Arizona fescue (*Festuca arizonica*) dominating the parcel. The Last Chance Mine, an inactive manganese strip

mine, lies on a portion of the Federal parcel. The mined area is regaining some vegetation.

Non-Federal Parcel: The non-Federal parcel contains a portion of riparian stream habitat that lies in the montane riparian wetlands of the Southwest (Brown 1994) [PR#29].

The forest stand composition and vertical structure on the non-Federal parcel is more diverse than the Federal parcel. Dominant trees in the parcel consist of ponderosa pine, Douglas fir (*Pseudotsuga menziesii*), spruce (*Picea* spp.), Gambel oak, alligator juniper (*Juniperus deppeana*), Rocky Mountain juniper (*Juniperus scopulorum*) and some riparian trees such as tamarisk (*Tamarix* spp.) along portions of East Clear Creek. The composition of the forest stand differs on various portions of the parcel. Approximately 55 acres of mixed-conifer and oak atop of the ridge of East Clear Creek canyon consists of Douglas fir, spruce, ponderosa pine, and Gambel oak. The diameters of these trees are diverse and range from seedlings up to 16 inches dbh. A few large diameter alligator juniper and Rocky Mountain juniper occur on the south facing slopes within East Clear Creek canyon. The area south of the creek is predominately ponderosa pine ranging in size from seedlings to diameters greater than 16 inches. There is a large diversity of shrubs throughout the parcel including cliffrose (*Cowania mexicana*), deerbrush (*Ceanothus fendleri*), fernbush (*Chamaebatiaria millefolium*), Fremont barberry (*Berberis fremontii*), mountain mahogany (*Cercocarpus montanus*), New Mexican locust (*Robinia neomexicana*), and Arizona rose (*Rosa arizonica*). The understory consists primarily of native bunch grasses (*Bouteloua* spp.), and several species of upland sedge (*Carex* spp.) occur along the creek.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: There would be no vegetation removal.

Non-Federal Parcel: Under Alternative A, No Action, the exchange will not take place and development would likely occur on the existing non-Federal land. The construction of infrastructure and home sites would result in the loss of vegetation. Residential lots would potentially range from 0.7 acre to 10 acres with open space near the creek ranging from approximately 200 to 300 acres. Development would likely occur on approximately 520 to 620 acres, therefore it is likely that tree and vegetation clearing would occur on these development acres. The well-developed ponderosa forest south of the creek would experience the greatest clearing, although some development would also occur in the mixed-conifer and oak stand northwest of the creek and along the southeast rim. To the extent practicable, trees would be retained. Additional disturbance of surrounding forest lands would likely be necessary for utilities and improved access.

Cumulative Effects

Cumulative effects in addition to vegetation removal on the non-Federal parcel as a result of development would likely include fuels treatment within the Clint's Well Wildland Urban Interface (WUI). Neither activity would substantially affect the overall vegetation community of the CNF.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange will occur and the Federal parcel would likely be developed into a residential subdivision. The construction of infrastructure and home sites would likely result in the loss of vegetation. Development would likely occur on the entire parcel with the exception of the land immediately adjacent to Iron Man Draw and a small portion of the property on the east side of FH 3 and north of the neighboring private parcel. Residential lots would likely range from approximately 1 to 12 acres with open space primarily near Iron Man Draw ranging from approximately 30 to 60 acres. Development would likely occur on approximately 440 to 470 acres. To the extent practicable, trees would be retained on construction lots. Ponderosa forest and native grasses would be lost. Since the parcel abuts FH 3, where existing utilities are located, little additional forest land would likely be disturbed for utilities and residential access.

Non-Federal Parcel: This alternative would preserve the larger and more diverse vegetation on the non-Federal parcel.

Cumulative Effects

Under Alternative B, Proposed Action, increased commercial development may occur in conjunction with residential development on the Federal land. However, such development would likely be limited to the adjacent, private land. Since the adjacent private land contains commercial activity including a lodge and recreational vehicle park, little additional vegetation loss would likely occur from such development. Thus, there are no foreseeable actions that, in conjunction with the likely development of the Federal land, would result in cumulative impacts on vegetation.

Sensitive Species

Affected Environment

Federal Parcel: All ten of the Mogollon Rim Ranger District sensitive plant species were reviewed. It was determined that suitable habitat exists on or near the Federal parcel for four of the ten sensitive plant species including Arizona sneezeweed (*Helenium arizonicum*), Flagstaff beardtongue (*Penstemon nudiflorus*), Flagstaff pennyroyal (*Hedeoma diffusum*), and Mt. Dellenbaugh sandwort (*Arenaria aberrans*).

Non-Federal Parcel: On the non-Federal parcel, there is suitable habitat for seven of the ten sensitive plants listed by the Mogollon Rim Ranger District: Arizona bugbane (*Cimicifuga arizonica*), Arizona sneezeweed, cliff fleabane (*Erigeron saxatilis*), Flagstaff beardtongue, Flagstaff pennyroyal, Mogollon thistle (*Cirsium parryi mogollonicum*), and Mt. Dellenbaugh sandwort. A rare plant survey was conducted for both of the parcels proposed for exchange, and no sensitive plant species were found on either parcel (EnviroSystems 2007) [PR#172 & 173]. There are no Threatened or Endangered plant species or their habitats on either parcel. All of the sensitive plant species with habitats occurring on either the Federal parcel or the non-Federal parcel are described in Table 3.1.

Table 3.1. Forest Service Sensitive Plant Species with Known Habitat in the Federal and Non-Federal Parcels

COMMON NAME	SCIENTIFIC NAME	PREFERRED HABITAT DESCRIPTION	HABITAT PRESENT	
			FEDERAL PARCEL	NON-FEDERAL PARCEL
Arizona bugbane	<i>Cimicifuga arizonica</i>	Moist, loamy soil in the transition between coniferous forests and riparian zones; require rich, fertile, deeply-shaded soil high in humus and humidity.	No	Yes
Arizona sneezeweed	<i>Helenium arizonicum</i>	Wet regions in ponderosa pine forests, such as bogs, lakes, ponds and roadside ditches.	Yes	Yes
Cliff fleabane	<i>Erigeron saxatilis</i>	Moist north facing slopes of sheer canyon walls, steep solid rock, and bedrock outcrops from 4,400-7,000 feet; occurs on dacite but prefers Coconino sandstone.	No	Yes
Flagstaff pennyroyal	<i>Hedeoma diffusum</i>	Montane Conifer Forest plant community at elevations between 4,500-7,000 feet; restricted to small and scattered limestone and sandstone outcrops of relatively undisturbed habitats.	Yes	Yes
Flagstaff beardtongue	<i>Penstemon nudiflorus</i>	Dry slopes in ponderosa pine forest in mountainous or hilly places south of the Colorado River.	Yes	Yes
Mogollon thistle	<i>Cirsium parryi mogollonicum</i>	Moist to very moist soils in shaded riparian understory at 7,200 feet in coniferous forests including ponderosa pine.	No	Yes
Mt. Dellenbaugh sandwort	<i>Arenaria aberrans</i>	Oak, pine, pinyon-juniper woodlands among the junipers. Occurs on sandy soils in Coconino County.	Yes	Yes

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No vegetation or soil disturbance would occur and no threatened, endangered, or sensitive plant species are present. Therefore there would be no effects to threatened, endangered, or sensitive plant species.

Non-Federal Parcel: No threatened, endangered or sensitive plant species were located on the non-Federal parcel during surveys; therefore there would be no impacts to such species as a result of implementation of Alternative A, No Action.

Cumulative Effects

There would be no impacts to threatened, endangered or sensitive plant species; therefore there would be no cumulative impacts to threatened, endangered or sensitive plant species.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: No threatened, endangered or sensitive plant species were located on the Federal parcel during surveys; therefore there would be no impacts to such species as a result of implementation of Alternative B, Proposed Action.

Non-Federal Parcel: No threatened, endangered or sensitive plant species were located on the non-Federal parcel during surveys; therefore there would be no impacts to such species as a result of implementation of Alternative B, Proposed Action.

Cumulative Effects

There would be no impacts to threatened, endangered or sensitive plant species, therefore there would be no cumulative impacts to threatened, endangered or sensitive plant species.

Invasive Weeds

Affected Environment

Non-native species are considered noxious or invasive due to their ability to potentially out-compete native species. CNF ranks invasive plants as Class A, B, and C. Class A plants receive the highest priority and management emphasis is complete eradication. Class B species receive second highest priority with the management emphasis to contain the spread, decrease population size, and eventually eliminate the infestation. Class C species receive the lowest priority. The management emphasis is to contain spread to present population size or to decrease the population (Phillips et al. 1998) [PR#36a].

The invasive weed surveys conducted for the Federal and non-Federal parcels showed that both contained the common invasive plants cheatgrass (*Bromus tectorum* – Class C) and common mullein (*Verbascum thapsus* – Class C).

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: There would be no development activity resulting in soil disturbance or activities that may lead to the establishment of invasive plants.

Non-Federal Parcel: Under Alternative A, No Action, the exchange will not take place and development would likely occur on the existing non-Federal land. Construction activities and increased vehicular activity following development increase the potential to cause further spread of invasive plant species. Equipment, vehicles, materials, and people entering and leaving the parcel could unknowingly carry seeds and/or propagate parts of invasive plants into and out of the parcel. The soil disturbing nature of construction could provide sites for the establishment of invasive plants. The introduction and spread of invasive species could be reduced or eliminated through the voluntary implementation by the developer of Best Management Practices (BMPs) followed by CNF for weed control. These BMPs are suggested in the Biological Assessment and Evaluation (EnviroSystems 2007).

Cumulative Effects

The development of adjacent lands is not anticipated, and use of BMPs by CNF on the adjacent lands would likely minimize the potential for the introduction or spread of noxious weeds on those lands. Thus, no cumulative impacts with regard to the introduction or spread of invasive vegetation would likely occur.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange will occur and the Federal parcel would likely be developed into a residential subdivision. As is the case with Alternative A, construction activities and increased vehicular activity following development increase the potential to cause further spread of invasive plant species. Equipment, vehicles, materials, and people entering and leaving the parcel could unknowingly carry seeds and/or propagate parts of invasive plants into and out of the parcel. The soil disturbing nature of construction could provide sites for the establishment of invasive plants. The introduction and spread of invasive species could be reduced through the implementation by the developer of BMPs developed by CNF for weed control. These BMPs are suggested in the Biological Assessment and Evaluation (EnviroSystems 2007).

Non-Federal Parcel: The owners of the non-Federal parcel have committed to eradicate invasive weeds on that parcel prior to completion of the exchange should the exchange be

approved. Therefore, a larger and weed-free parcel would become subject to CNF management, having an overall positive impact with regard to invasive weeds.

Cumulative Effects

The development of adjacent lands is not anticipated, and use of BMPs by CNF on the adjacent lands would likely minimize the potential for the introduction or spread of noxious weeds on those lands. Thus, no cumulative impacts with regard to the introduction or spread of invasive vegetation would likely occur.

WILDLIFE

Non-Special Status Species

Affected Environment

Federal Parcel: The wildlife of the Federal parcel consists of those species typical of even-aged ponderosa pine forest having limited, interspersed Gambel oak with low to moderate cover. Mammal species that likely occur in the area include Abert's squirrel (*Sciurus aberti*), deer mouse (*Peromyscus maniculatis*), eastern cottontail (*Sylvilagus floridanus holzeri*), elk (*Cervus elaphus nelsoni*), mule deer (*Odocoileus hemionus*) and silver-haired bat (*Lasionycteris noctivagans*). Common avian species that could use the area include dark-eyed junco (*Junco hyemalis*), hairy woodpecker (*Picoides villosus*), mountain chickadee (*Poecile gambeli*), Stellar's jay (*Cyanocitta stelleri*), and wild turkey (*Meleagris gallopavo*).

Non-Federal Parcel: The non-Federal parcel has more diverse habitats than the Federal parcel. In addition to the ponderosa pine forest located south of the creek, a mixed-conifer stand with Douglas fir, spruce, Gambel oak and ponderosa pine occurs along the rim of East Clear Creek where the elevation exceeds 7,500 feet. Some large diameter alligator juniper and Rocky Mountain juniper occur on the south facing slopes of East Clear Creek. Approximately two acres of riparian habitat occur along two miles of East Clear Creek. Heavy cover exists throughout the parcel. Additionally, the rock cliffs along the creek provide breeding, nesting, and foraging sites. Due to the presence of more habitats, the non-Federal parcel supports a greater diversity of wildlife. Mammal species that likely occur in the ponderosa pine area include the same species as described for the Federal parcel. Red-squirrel (*Tamiasciurus hudsonicus*) habitat occurs in the mixed conifer stand along the rim of the creek. Common avian species that could use the forested areas include Clark's nutcracker (*Nucifraga columbiana*), dark-eyed junco, hairy woodpecker, mountain chickadee, pygmy nuthatch (*Sitta pygmaea*), Stellar's jay, white-breasted nuthatch (*Sitta carolinensis*), and wild turkey. Birds that could potentially use the juniper trees in East Clear Creek canyon include juniper titmouse (*Baeolophus ridgwayi*) and pinyon jay (*Gymnorhinus cyanocephalus*). The riparian habitat likely supports a variety of avian species such as common black hawk (*Buteogallus anthracinus*), Lincoln's sparrow (*Melospiza lincolnii*), and painted redstart (*Myioborus*

pictus). In addition, East Clear Creek provides aquatic habitat for a variety of amphibians and native fish.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative A there is no effect on wildlife on the Federal parcel.

Non-Federal Parcel: Under Alternative A, No Action, the exchange will not take place and development would likely occur on the existing non-Federal land. The construction of infrastructure and home sites would result in the loss of approximately 520 to 620 acres of diverse, high-quality wildlife habitat. Approximately 200 to 300 acres of open space would exist near the creek. The well-developed ponderosa forest south of the creek would experience the greatest clearing, although some development would also occur in the mixed-conifer and oak forest on the rim of the creek. Bringing in utilities and improving access to the parcel would create disturbance to wildlife during these activities. Increased traffic and recreational use of East Clear Creek and the surrounding CNF lands would also impact wildlife.

Cumulative Effects

No other similar activity in combination with Alternative A would substantially affect the overall wildlife community of the CNF.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange will occur and the Federal parcel would likely be developed into a residential subdivision. The construction of infrastructure and home sites would result in the loss of 440 to 470 acres of less diverse wildlife habitat. Development would likely occur on the entire parcel with the exception of the land immediately adjacent to Iron Man Draw and a small portion of the property on the east side of FH 3 and north of the neighboring private parcel. Open space would primarily exist near Iron Man Draw and range from approximately 30 to 60 acres. Primarily ponderosa forest and native grasses would be lost. Since the parcel abuts FH 3, little additional wildlife habitat would likely be disturbed for utilities and residential access. Additional recreational use of surrounding CNF land would impact wildlife.

Non-Federal Parcel: Under Alternative B, fewer disturbances to wildlife habitat would likely occur because the diverse habitats retained on the non-Federal parcel would be under CNF management, and the lost habitat on the Federal parcel would be of lesser

quality. Therefore, Alternative B, the Proposed Action, would result in a net improvement in wildlife habitat available on the CNF.

Cumulative Effects

No other similar activity in combination with Alternative B would substantially affect the overall wildlife community of the CNF.

Special Status Species

Affected Environment

All 30 species on the Mogollon Rim Ranger District’s Threatened, Endangered, and Sensitive Species list were reviewed. This list details the Federal, State, and forest sensitive status of individual species and identifies those that are either known to occur or have suitable habitat in the Federal and non-Federal parcels. These species and their habitats are listed in Table 3.2.

Table 3.2. Special Status Wildlife Species with Known or Potential Habitat within or Adjacent to the Federal and non-Federal Parcels

COMMON NAME	SCIENTIFIC NAME	HABITAT DESCRIPTION	HABITAT PRESENT		STATUS	
			FEDERAL PARCEL	NON-FEDERAL PARCEL	FED	USFS
Mammals						
Navajo Mountain Mexican vole	<i>Microtis mexicanus navaho</i>	Prostrate thickets of a variety of shrubs that provide dense cover. Dry grassy areas adjacent to ponderosa pine.	Yes	Yes	--	S
Birds						
American peregrine falcon	<i>Falco peregrinus anatum</i>	Nests in sheer, steep cliffs; preys on birds in woodlands, riparian areas, and other habitats with abundant prey near nest site.	No	Yes	--	S
Bald eagle	<i>Haliaeetus leucocephalius</i>	Nests in large trees or cliffs near water with abundant prey. Mainly feeds on fish but will also feed on waterfowl, small mammals, and carrion.	No	Yes	T	S
Common black hawk	<i>Buteogallus anthracimus</i>	Obligate riparian nester in undisturbed habitat with flowing streams and tree groves.	No	Yes	--	S
Eared trogon	<i>Euptilotis neoxenus</i>	Pine/pine-oak 5,000 to 7,000 feet in elevation.	Yes	Yes	--	S
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Nests in canyons and dense forests with multi-layered structure of mixed conifer or ponderosa pine/Gambel oak; seemingly prefers sites with cool microclimates.	Yes	Yes	T	S
Northern goshawk	<i>Accipiter gentilis</i>	Ponderosa pine and mixed conifer forests; some riparian habitats; may use pinyon/juniper woodlands for winter foraging grounds.	Yes	Yes	--	S
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Riparian obligate with dense canopy cover and willow, cottonwood and tamarisk in floodplains.	No	Yes	E	S

Reptiles and Amphibians						
Chiricauhau leopard frog	<i>Rana chiricahuensis</i>	Rocky streams, stock tanks, pools, and permanent springs in forested areas such as ponderosa pine and pine-oak habitats.	Yes	Yes	T	S
Narrow-headed gartersnake	<i>Thamnophis rufipunctatus</i>	Pinyon-juniper and pine-oak woodland into ponderosa pine forest (5,000-6,000 feet in elevation) near or in permanently flowing rocky streams.	Yes	Yes	--	S
Northern leopard frog	<i>Rana pipiens</i>	Permanent waters with rooted aquatic vegetation, also frequents pond, canals, marshes, springs, and streams.	Yes	Yes	--	S
Southwestern Arizona toad	<i>Bufo microscaphus</i>	Rocky streams in canyons and floodplains in pine-oak belt and evergreen woodlands. Found in East Clear Creek.	No	Yes	--	S
Fish						
Gila trout	<i>Oncorhynchus gilae</i>	Small mountain streams in narrow and shallow headwaters with cover.	No	Yes	E	S
Little Colorado spinedace	<i>Lepidomeda vittae</i>	Streams 0.16 to 1.3 m deep. Designated critical habitat in East Clear Creek.	No	Yes	T	S
Invertebrates						
Maricopa tiger beetle	<i>Cicindela oregona Maricopa</i>	Sandy stream banks, seeps, and reservoirs. Requires sandy and silty substrate located 1,000 to 6,900 feet in elevation.	Yes	Yes	--	S
Plateau giant tiger beetle	<i>Amblychila picolomini</i>	Dry, open, rocky areas and upland grasses.	Yes	Yes	--	S
Spotted skipperling	<i>Piruna polingii</i>	Moist meadows and stream sides in mountains of Arizona, New Mexico, and Mexico. Adults visit yellow composites for nectar.	No	Yes	--	S
Federal (Fed): T = Threatened, E = Endangered; USFS: S = Sensitive						

Federal Parcel: Nine special-status species were found to have suitable habitat on the Federal parcel including two federally listed species: the Chiricahua leopard frog (*Rana chiricahuensis*) and Mexican spotted owl (*Strix occidentalis lucida*); and seven forest sensitive species: the eared trogon (*Euptilotis neoxenus*), giant tiger beetle (*Amblychila picolomini*), narrow-headed gartersnake (*Thamnophis rufipunctatus*), Navajo Mountain Mexican vole (*Microtis mexicanus navaho*), northern goshawk (*Accipiter gentilis*), northern leopard frog (*Rana pipiens*), and the Maricopa tiger beetle (*Cicindela oregona Maricopa*). The Federal parcel is located within Mexican spotted owl critical habitat, and a Protected Activity Center (PAC), a place with historic occurrences of the species, abuts the north end of the Federal parcel. Also, a northern goshawk Post Fledgling-Family Area (PFA) lies to the north of the parcel. Two years of surveys following the USFWS 2003 protocol were completed for the Mexican spotted owl and the northern goshawk on the Federal land [PR#69]. One Mexican spotted owl roost was identified approximately 0.5-mile from the Federal parcel in 2005, and one sub-adult goshawk was spotted foraging in the Federal parcel (EnviroSystems 2007) [PR#172 & 173]. The CNF Mogollon Rim Ranger District completed amphibian and reptile surveys on the Federal parcel and the surrounding area and found no special-status amphibians or reptiles

occurring in the Federal parcel (Data on file at the Mogollon Rim District Biologist's office). No other special-status species were observed on the Federal parcel.

Non-Federal Parcel: The non-Federal parcel contains more diverse habitats; thus, the parcel provides greater opportunity to support special-status species. Seventeen special-status species were identified as having potential habitat on the non-Federal parcel. They are six federally-listed species including the bald eagle (*Haliaeetus leucocephalus*), Chiricahua leopard frog, Gila trout (*Oncorhynchus gilae*), Little Colorado spinedace (*Lepidomeda vittae*), Mexican spotted owl, and southwestern willow flycatcher (*Empidonax traillii extimus*); and eleven sensitive species including the American peregrine falcon (*Falco peregrinus anatum*), common black hawk (*Buteogallus anthracimus*), eared trogon, giant tiger beetle, Maricopa tiger beetle, narrow-headed gartersnake, Navajo Mountain Mexican vole, northern goshawk, northern leopard frog, spotted skipperling (*Piruna polingii*), and southwestern Arizona toad. The non-Federal parcel is considered Mexican spotted owl critical habitat, and East Clear Creek is designated critical habitat for the Little Colorado spinedace. A general survey was completed to determine the presence of special status species within the non-Federal parcel, and no special status species were observed. However, no intensive species-specific surveys were completed on the non-Federal parcel; therefore, the presence of rare amphibians/reptiles, Mexican spotted owls, and northern goshawks on the non-Federal parcel is unknown. However, due to the presence of optimal habitat characteristics for some of the species discussed, it is possible that may be present.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: Habitat for the nine special-status species occurring on the Federal parcel would not be impacted.

Non-Federal Parcel: Under Alternative A, No Action, the exchange will not take place and development would likely occur on the non-Federal land. Construction activities and subsequent human habitation would likely impact habitat for six federally listed species and eleven Forest Service sensitive species including designated critical habitat for the Mexican spotted owl. Increased human recreation within the East Clear Creek area could disturb and degrade the habitat for the special-status, riparian and aquatic species including designated critical habitat for the Little Colorado spinedace. Habitat for seventeen special-status species on the non-Federal parcel would likely be impacted.

Cumulative Effects

No other similar activity in combination with Alternative A would substantially affect special status species as a result of Alternative A.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange will occur and the Federal parcel would likely be developed into a residential subdivision. Construction activities and subsequent human habitation would likely impact habitat for two federally listed species and seven sensitive species. The lost habitat on the Federal parcel is of lesser quality and potentially provides habitat for nine special-status species.

Non-Federal Parcel: Under Alternative B, fewer disturbances to special-status species' habitat would occur because the diverse habitats which would be retained on the non-Federal parcel would be under CNF management, and would potentially support suitable habitat for seventeen special status species.

Cumulative Effects

Special status species, such as Mexican spotted owl and northern goshawk potentially occurring in the forest lands in the area surrounding the Federal parcel could be impacted by increased human vehicular recreation. Impacts to the Mexican spotted owl and northern goshawk could be mitigated by designating roads for human recreation outside of the boundaries of the PAC and the PFA. No other similar activity in combination with Alternative B would substantially affect the special-status species of the CNF.

Management Indicator Species

Affected Environment

Forest Service Management Indicator Species (MIS) are wildlife species representative of different vegetation communities. Long-term changes in the populations of these species serve as a barometer of the overall health of ecosystems. For each management area in the CNF LMRP, the CNF has identified MIS.

Federal Parcel: The Federal parcel lies within Management Area 3 (MA3). There are eight MIS that serve as a gauge of overall health of habitat in MA3. There is habitat for seven of the eight MIS for MA3 in the Federal parcel including Abert's squirrel, elk, hairy woodpecker, Mexican spotted owl, northern goshawk, pygmy nuthatch, and wild turkey. There is no habitat for the red squirrel on the Federal parcel.

Non-Federal Parcel: Should the non-Federal parcel become subject to Forest Service management, the parcel would lie within MA3 as well as MA12 due to the presence of the riparian habitat. There is habitat for all eight of the MA3 MIS in the non-Federal parcel including Abert's squirrel, elk, hairy woodpecker, Mexican spotted owl, northern goshawk, pygmy nuthatch, red squirrel, and wild turkey. There is a total of five MIS for MA12; they are cinnamon teal (*Anas cyanoptera*), Lincoln's sparrow (*Melospiza lincolnii*), Lucy's warbler (*Vermivora luicae*), macroinvertebrates, and yellow-breasted

chat (*Icteria virens*). The non-Federal parcel provides habitat for the cinnamon teal, Lincoln's sparrow, and macroinvertebrates. Therefore, there is habitat for a total of ten MIS on the non-Federal parcel. MIS for MA3 and MA12 are found in Table 3.3 and Table 3.4., respectively.

Table 3.3. Management Area 3 MIS Forest-Wide Habitat and Populations Trends on the CNF

SPECIES	SCIENTIFIC NAMES	PREFERRED HABITAT	HABITAT IN FEDERAL PARCEL	HABITAT IN NON-FEDERAL PARCEL	FOREST-WIDE HABITAT TRENDS	FOREST-WIDE POPULATION TRENDS
Elk	<i>Cervus elaphus nelsoni</i>	Mountain meadows, coniferous forest, pinyon-juniper woodlands, grassland.	Yes	Yes	Stable	Stable
Red squirrel	<i>Tamiasciurus hudsonicus</i>	Mixed-conifer at elevations above 7,500 feet. Engelmann spruce, Douglas fir, white fir, large standing snags and large downed logs.	No	Yes	Stable	Inconclusive
Abert's squirrel	<i>Sciurus aberti</i>	Multi-storied ponderosa stands, nests in large ponderosa pines 20 to 110 feet.	Yes	Yes	Stable	Inconclusive
Wild turkey	<i>Meleagris gallopavo</i>	Ponderosa pine, pinyon-juniper, Gambel oak for mast foraging. Nesting usually occurs on steep slopes with high canopy and horizontal cover.	Yes	Yes	Stable	Stable to increasing
Hairy woodpecker	<i>Picoides villosus</i>	Over-wintering cavity nests in large ponderosa pine and mixed-conifer snags, strong selection for aspen snags, use live aspen proportional to availability, and select against non-aspen snags.	Yes	Yes	Declining	Stable
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Nests in canyons and dense forests with multi-layered structure in mixed conifer, ponderosa pine, and Gambel oak. Sites with cool microclimates preferred.	Yes	Yes	Stable: Mixed-conifer Declining: Pine-oak	Inconclusive
Northern goshawk	<i>Accipiter gentilis</i>	All ponderosa pine and mixed conifer above the Mogollon Rim.	Yes	Yes	Stable	Inconclusive

Pygmy nuthatch	<i>Sitta pygmaea</i>	Tree-trunk foragers of ponderosa pine and pinyon-juniper up to elevations of 10,000 feet.	Yes	Yes	Declining	Stable
Forest-wide trends from the U.S. Forest Service Management Indicator Species Report for the Coconino National Forest (2002).						

Table 3.4. Management Area 12 MIS Forest-Wide Habitat and Populations Trends on the CNF.

SPECIES	SCIENTIFIC NAMES	PREFERRED HABITAT	HABITAT IN FEDERAL PARCEL	HABITAT IN NON-FEDERAL PARCEL	FOREST-WIDE HABITAT TRENDS	FOREST-WIDE POPULATION TRENDS
Cinnamon teal	<i>Anas cyanoptera</i>	Summer residents in wetlands with cover.	No	Yes	Stable	Inconclusive
Lincoln's sparrow	<i>Melospiza lincolni</i>	Moist meadows, bogs, marshes with high grass cover.	No	Yes	Stable	Inconclusive
Lucy's warbler	<i>Vermivora luciae</i>	Late seral, low-elevation riparian forest with willows and mesquite.	No	No	Stable	Inconclusive
Yellow-breasted chat	<i>Icteria virens</i>	Late seral, low-elevation riparian forest with willows and mesquite.	No	No	Stable	Inconclusive
Macro-invertebrates	Not applicable	Late seral, high and low elevation riparian forests.	No	Yes	Inconclusive	Inconclusive
Forest-wide trends from the U.S. Forest Service Management Indicator Species Report for the Coconino National Forest (2002).						

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No development activities would occur, therefore no effects to the habitat or population trends for MIS would occur.

Non-Federal Parcel: Under Alternative A, No Action, the exchange will not take place and development would likely occur on the existing non-Federal land. Habitat for approximately eleven MIS including Abert's squirrel, cinnamon teal, elk, hairy woodpecker, Lincoln's sparrow, macroinvertebrates, Mexican spotted owl, northern goshawk, pygmy nuthatch, red squirrel, and wild turkey exists on the non-Federal parcel. The approximately 520 to 620 acres of development plus utility corridors, improved access, and increased recreational use of surrounding Forest Service land will likely displace the MIS with habitat on the non-Federal parcel except for the macroinvertebrates. However, the macroinvertebrates could be impacted from an increase in human recreational use of the East Clear Creek area. The displacement would not impact the overall CNF habitat or populations trends for MIS.

Cumulative Effects

There would be no impacts to MIS, therefore there would be no cumulative impacts to MIS habitat or population trends.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange will occur and the Federal parcel would likely be developed into a residential subdivision. There is habitat for seven MIS on the Federal parcel including Abert's squirrel, elk, hairy woodpecker, Mexican spotted owl, northern goshawk, pygmy nuthatch, and wild turkey. A northern goshawk was observed on the Federal parcel, and a Mexican spotted owl male roost was located within 0.5 miles of the parcel during 2005 surveys. The approximate 440 to 470 acres of development and increased recreational use of surrounding Forest Service land will likely displace the MIS with habitat on the non-Federal parcel. However, this displacement would not impact the overall CNF habitat or population trends for MIS.

Non-Federal Parcel: Given the existence of the riparian habitat, and a more diverse and mature vegetative cover available in the non-Federal parcel, Alternative B would have the impact of bringing more MIS habitat for a wider range of MIS under CNF management, however the increased acreage of habitat is small when compared to the Coconino National Forest and therefore would not impact population trends for MIS.

Cumulative Effects

There would be no impacts to MIS, therefore there would be no cumulative impacts to MIS habitat or population trends.

Migratory Birds

Affected Environment

The Arizona Partners in Flight (PIF) Bird Conservation Plan identifies priority bird species for effective and efficient ecological management by habitat type (Latta et al. 1999) [PR#39].

Federal Parcel: The habitat type available on the non-Federal parcel is ponderosa pine. There are five priority bird species potentially occurring on the Federal parcel including the cordilleran flycatcher (*Empidonax occidentalis*), Mexican spotted owl, northern goshawk, olive-sided flycatcher (*Contopus cooperi*), and the purple martin (*Progne subis*).

Non-Federal Parcel: The non-Federal parcel contains ponderosa pine, mixed-conifer, and upland riparian habitat. There are nine priority bird species potentially occurring on

the non-Federal parcel including the common black hawk, cordilleran flycatcher, MacGillivray’s warbler (*Oporornis tolmiei*), Mexican spotted owl, northern goshawk, olive-sided flycatcher, purple martin, red-faced warbler (*Cardellina rubrifrons*), and southwestern willow flycatcher. The migratory birds having habitat on or near the Federal and non-Federal parcels are given in Table 3.5.

Table 3.5. Migratory Bird Species with Habitat on or Near the Federal and Non-Federal Parcels

SPECIES	SCIENTIFIC NAME	PRIORITY FOR HABITAT TYPE	HABITAT DESCRIPTION	HABITAT IN FEDERAL PARCEL	HABITAT IN NON-FEDERAL PARCEL
Common black hawk	<i>Buteogallus anthracinus</i>	Upland riparian	Obligate riparian nester in undisturbed habitat with flowing streams and tree groves.	No	Yes
Cordilleran flycatcher	<i>Empidonax occidentalis</i>	Pine	Dense canopy cover with moist shady homogenous forests.	Yes	Yes
MacGillivray’s warbler	<i>Oporornis tolmiei</i>	Upland riparian	Riparian with wet meadows, on edge of conifer and deciduous forests.	No	Yes
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Mixed-conifer and pine	Uneven-aged stands with dense canopy cover and low understory with downed logs.	Yes	Yes
Northern goshawk	<i>Accipiter gentiles</i>	Pine-mixed conifer	Nests in old-growth mixed conifer and ponderosa pine and forages in openings or dense forests.	Yes	Yes
Olive-sided flycatcher	<i>Contopus cooperi</i>	Pine-mixed conifer	Low-density canopy cover, high snag density, and forest edges.	Yes	Yes
Purple martin	<i>Progne subis</i>	Pine	Open canopy cover, open mid/understory, and high snag density.	Yes	Yes
Red-faced warbler	<i>Cardellina rubrifrons</i>	Upland riparian	Oak in upland riparian.	No	Yes
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Upland riparian	Riparian obligate with dense canopy cover and willow, cottonwood and tamarisk in floodplains.	No	Yes

Priority bird species by habitat type identified in Arizona Partners in Flight Bird Conservation Plan (Latta et al. 1999).

Environmental Consequences

ALTERNATIVE A

Direct and Indirect Effects

Federal Parcel: There would be no impact to priority migratory bird species.

Non-Federal Parcel: Under Alternative A, No Action, the exchange will not take place and development would likely occur on the existing non-Federal land. Appropriate habitat for nine priority bird species occurs on the non-Federal parcel as opposed to five priority birds potentially occurring on the Federal parcel. Construction and post-development activities such as human occupation, use of vehicles, and recreational use of surrounding areas would likely result in these species being displaced to habitat in the surrounding area.

Cumulative Effects

There are no foreseeable actions that, in conjunction with the development of the non-Federal land, would result in cumulative impacts to migratory birds.

ALTERNATIVE B

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange will occur and the Federal parcel would likely be developed into a residential subdivision. Appropriate habitat for five migratory bird species occurs in the Federal parcel. Construction and post-development activities such as human occupation, use of vehicles, and recreational use of surrounding areas will result in these species utilizing habitat in the surrounding area.

Non-Federal Parcel: Under Alternative B, a variety of habitat types that support nine priority bird species on the non-Federal parcel would be retained and come under CNF management. Alternative B would have beneficial effects regarding migratory birds since the consequence is to place the parcel under CNF management.

Cumulative Effects

There are no foreseeable actions that, in conjunction with the development of the Federal land, would result in cumulative impacts to migratory birds.

FIRE AND FUELS

Affected Environment

Federal Parcel: The live and dead fuels available on the Federal parcel are generally consistent with surrounding CNF lands with the exception of the Long Valley Experimental Forest which abuts the property to the west.

Non-Federal Parcel: Similarly, fuels on the non-Federal parcel are generally consistent with surrounding CNF lands.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: Fire and fuels on and in the vicinity of the Federal Parcel would not be affected by the No Action alternative.

Non-Federal Parcel: Under the No Action alternative, the developers would be responsible for implementation of any fire and fuel treatments on the non-Federal parcel during and following residential development. Fire fighting capabilities would be provided to meet Coconino County requirements. Fire and fuels management in the surrounding CNF land would be the responsibility of CNF.

Cumulative Effects

No substantial cumulative effects would occur under the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under the Proposed Action alternative the exchange would occur and the developers would be responsible for implementation of fire and fuel treatments on the acquired Federal parcel during and following residential development. Fire fighting capabilities would be provided to meet Coconino County requirements. Fire and fuels management in the surrounding CNF land are being addressed in the Clint's Fuel Reduction Project currently under development. The CNF would be responsible for implementation of the plan whose purpose is to identify measures to reduce the fire risk in the planning area and specifically in the urban interface. The goal of these fuels reduction projects and prescribed fires is primarily to remove ground fuels that could promote a large crown fire.

Non-Federal Parcel: The management of the non-Federal parcel would become the responsibility of the CNF and fire and fuels management would be consistent with the LMRP.

Cumulative Effects

No substantial cumulative effects would occur under the Proposed Action alternative. The non-Federal and Federal lie within the Clint's Fuel Reduction Project currently in the planning stage. The CNF would be responsible for implementation of the Clint's Fuel Reduction Plan.

HAZARDOUS MATERIALS

Affected Environment

Prior to the initiation of this land exchange a Transaction Screening Analysis (TSA) was completed on the Federal parcel (CNF 2002) [PR#57] and a Phase I Environmental Site Assessment (ESA) was performed for the non-Federal lands (Golder Associates 2001) [PR#47]. Both of these evaluations included interviews, record and file searches, and site inspections. The TSA for the Federal land also included lands surrounding the Federal parcel including the Blue Ridge Resort and RV Park and a one-acre private parcel. No recognized environmental concerns were found to be associated with either of the potential exchange parcels.

Updated ESAs have been conducted for both the Federal Parcel (EnviroSystems 2006a) [PR#162] and the non-Federal parcel (EnviroSystems 2006b) [PR#165]. These updated assessments confirmed the previous findings of no recognized environmental hazards associated with either parcel. Finalization of the documentation for these ESA's is pending review by the Forest Service.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. Installation of sewage treatment facilities in accordance with Coconino County and State of Arizona requirements and provisions for solid waste disposal in an approved landfill will minimize any risk of significant impacts regarding hazardous or solid waste and petroleum products.

Cumulative Effects

There are no substantial cumulative effects to hazardous or solid waste and petroleum products associated with the No Action alternative.

There are no foreseeable actions that, in conjunction with the planned development of the non-Federal parcel, would result in impacts regarding hazardous or solid waste and petroleum products.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. Installation of sewage treatment facilities in accordance with Coconino County and State of Arizona requirements and provisions for solid waste disposal in an approved landfill will minimize any risk of impacts regarding hazardous or solid waste and petroleum products.

Non-Federal Parcel: MAs 3 and 12 and subsequent plans for the area.

Cumulative Effects

There are no substantial cumulative effects to hazardous or solid waste and petroleum products associated with the Proposed Action alternative.

HERITAGE RESOURCES

Affected Environment

Federal Parcel: A heritage resources survey was completed for the Federal land in November, 2005 in accordance with the National Historic Preservation Act (EnviroSystems 2006c) [PR#152]. Effects are determined according to the process established in Section 106 of the Act and implementing regulations at 36 CFR 800. The survey identified three historic sites and six isolated features. The six isolated features are not recommended as eligible for the NRHP since their information potential is exhausted by recordation. One of the three historic sites was recommended eligible for the National Register of Historic Places (NRHP) on the basis of the survey. A data recovery plan is currently being prepared for this site.

The following thirteen Native American Indian groups were notified of the project: Dine' Medicine Man's Association, Fort McDowell Yavapai Nation, Hopi Tribe, Hualapai Tribe, Havasupai Tribe, Navajo Nation, Pueblo of Zuni, San Carlos Apache Tribe, San Juan Southern Paiute Tribe, Tonto Apache Tribe, Yavapai-Apache Nation, Yavapai-

Prescott Tribe, and White Mountain Apache Tribe. No replies about tribal concerns about this project were received. No areas of traditional cultural importance or areas of specific tribal concern are known for this part of the Forest, based on previous consultations and Forest research into tribal uses of the Forest.

Non-Federal Parcel: No heritage resource survey is required for non-Federal exchange lands. Potential exists for sites along the East Clear Creek stream corridor and canyon.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative A, No Action, the exchange would not occur and the eligible site would remain under CNF management and the LRMP would promote maintenance of this resource. Federal protection of the heritage resource would be maintained.

Non-Federal Parcel: Private land use and development which occur will not be subject to the National Historic Preservation Act.

Cumulative Effects

There are no substantial cumulative effects to heritage resources associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange may not occur until Federal protection is afforded the heritage resource. Proper mitigation measures would be implemented before the proposed land exchange can be completed. The CNF, in consultation with the State Historic Preservation Officer, is developing an appropriate data recovery plan and other mitigation measures as required in the LRMP. Implementation of agreed upon measures will ensure that the information potential of the site is exhausted prior to its being conveyed into private ownership. These mitigation efforts would result in the proposed land exchange having no effect on heritage resources.

Non-Federal Parcel: Any heritage resources on the land acquired by the Forest would be subject to the protections of the National Historic Preservation Act.

Cumulative Effects

There are no substantial cumulative effects to heritage resources associated with the Proposed Action alternative.

NOISE

Affected Environment

Federal Parcel: The Federal land has noise primarily associated with natural phenomena such as wildlife and wind. There is also some noise from recreational activity and aircraft over flights. Noise levels also include those related to the adjacent commercial development and traffic associated with FH 3. Noise levels have not been measured but are expected to be less than lower levels for urban ambient sound, which range from 40 to 55 dBA.

Non-Federal Parcel: The non-Federal land is relatively isolated and surrounded by Federal lands. Noise levels are low and primarily associated with natural phenomena such as wildlife and wind. There is also some noise from recreational activity and aircraft over flights.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel. Noise levels would remain consistent with use.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not occur and noise levels would likely increase with development and subsequent occupation of the non-Federal land. Increased noise levels associated with construction activities would be temporary, and noise associated with occupation of the parcel would be expected to correspond to the lower range of urban ambient noise levels. The land is relatively remote, limited in size and surround by CNF-managed lands.

Cumulative Effects

There are no substantial cumulative effects to noise associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision; however, the development would be adjacent to a private parcel containing commercial facilities and a segment of FH 3. Increased noise levels associated with construction activities would be temporary. Noise levels associated with occupation would be expected to correspond to the lower range of urban ambient noise levels since development is ultimately limited by the total availability of private land.

Non-Federal Parcel: Under the Proposed Action, noise levels would not increase on the non-Federal land consistent with the provisions of the LRMP that provide for acquisitions which achieve cost efficient management of Forest lands and maintain acquired lands as Forest-type lands.

Cumulative Effects

There are no substantial cumulative effects to noise associated with the Proposed Action alternative.

PUBLIC ACCESS AND RECREATION

Affected Environment

Federal Parcel: The Federal parcel is open to public use and offers a wide range of dispersed recreation opportunities. FH 3 provides a great deal of access to forest resources for camping, hiking, horseback riding, hunting, and off highway vehicle use. FH 3 receives heavy use particularly during summer months. The property is adjacent to a lodge and recreational vehicle resort making it more likely to be used for hiking and mountain biking by a transient population. Previous mining has resulted in making some locations within the parcel less desirable than other CNF lands from a visual aesthetics standpoint. There are no developed forest trails on the property.

Non-Federal Parcel: The non-Federal parcel is private property, and therefore is not legally open to public use. However, because the parcel is not fenced and identified as private land on the ground with signs, evidence shows some dispersed recreation occurs from people entering from the surrounding CNF land.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel. Recreation impacts would remain consistent with use.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. Since the parcel is privately owned, there would be no direct impact regarding public access and recreation within the parcel. Individuals using surrounding CNF lands would experience an impact to overall aesthetics and their forest experience by the changes to the diverse, rich forest land and increased use of access roads serving the development. In conjunction with development there would be more fencing, signage, and noise which would cause campers to move to other places further away from the parcel.

Cumulative Effects

There are no substantial cumulative effects to public access and recreation associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. Approximately 500 acres would be removed from CNF management and be unavailable for public use and recreational activities.

Non-Federal Parcel: The proposed exchange would result in an increase of 320 acres under CNF management. Further, the private parcel is more diverse in landform and vegetation, enhancing recreational opportunities for the public. Since the non-Federal parcel is surrounded by the CNF, use of surrounding lands for recreational purposes would be enhanced.

Cumulative Effects

There are no substantial cumulative effects to public access and recreation associated with the Proposed Action alternative.

WATER AND SOIL

Surface and Ground Water Quality and Quantity, and Floodplains

Affected Environment

The primary source of ground water near both parcels is the Coconino aquifer. The depth to ground water in this aquifer is approximately 550 feet near the non-Federal parcel and 700 feet near the Federal parcel. Water quality is good with less than 500 mg/L of dissolved solids. The principle constituents are sodium and chloride. Well yields vary

greatly depending on the degree of cementation, the saturated thickness, and the presence of faults. Yields likely range from 100 to 1,000 gal/min. on and near the parcels (McGavock et. al 1986) [PR#19].

Federal Parcel: The Federal parcel contains 1.6 miles of ephemeral washes and two tanks totaling 1.6 acres. Water quality in the ephemeral washes will vary significantly and tend to be poor during periods of substantial runoff and when water levels are very low. The water in the tanks will generally meet stock watering standards except in periods of drought when water levels are very low and dissolved solids substantially increase.

Non-Federal Parcel: The non-Federal parcel contains 2.0 miles of perennial water in East Clear Creek plus 2.0 miles of drainage channels to East Clear Creek. There are approximately 24 acres of riparian floodplains adjacent to the creek. The parcel contains one stock tank containing approximately 0.2 acre of water on average. Water quality in the ephemeral washes will be as described above. Water quality in the base flow of East Clear Creek is likely quite good with dissolved-solids concentrations between ranging from less than 100 mg/L to 200 mg/L (Fleishman 2005; McGavock, et al. 1986) [PR#110 & PR#19].

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel. Recreation impacts would remain consistent with use.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. Surface water resources would largely be eliminated except for the two mile stretch of East Clear Creek. Construction and post-development activities have the potential to degrade the quality of the creek somewhat; however, compliance with County and State regulations regarding storm water runoff and sewage and solid waste disposal would minimize the degradation. Some increase in dissolved solids could be expected in ground water which is extracted due to pumping; however, there wouldn't be any regional degradation of ground water quality. Water use is estimated to range from 38,000 to 215,000 gallons per day based on the housing unit density projections. At an average production rate of 500 gallons per minute, a well completed in the Coconino aquifer would produce 720,000 gallons per day (McGavock, et al. 1986) [PR#19]. A private well for the development may meet water needs for the development, however, Coconino County Planning and Zoning would require more in-depth evaluation of water supply prior to issuing construction permits.

Cumulative Effects

There are no substantial cumulative effects to surface and ground water quality associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. Public administration of two stock tanks would be foregone. Construction and post-development activities have little if any potential to degrade the quality of surface water. County and State regulations regarding storm water runoff and sewage and solid waste disposal would minimize such potential degradation. Some increase in dissolved solids could be expected in ground water which is extracted due to pumping; however, there wouldn't be any regional degradation of ground water quality. Water use is estimated to range from 19,000 to 226,000 gallons per day based on the housing unit density projections. At an average production rate of 500 gallons per minute, a well completed in the Coconino aquifer would produce 720,000 gallons per day (McGavock, et al. 1986) [PR#19]. Therefore, no impact on regional water availability would be anticipated. These estimates of water use assume year-round occupation of residences. Many of the proposed residences would probably be seasonally occupied. Thus, water demand would be less than the conservative estimates given above.

Non-Federal Parcel: This alternative has the effect of preserving the quantity and quality of East Clear Creek and its tributaries.

Net change in Surface Water and Floodplains: There would be a net gain of 2 miles of perennial stream, a net gain of .6 miles of non-riparian stream course, a net gain of approximately 23 acres of riparian floodplains, and a net loss of 1.3 acres of stock tanks to the Government.

Cumulative Effects

There are no substantial cumulative effects to surface and ground water quality associated with the Proposed Action alternative.

Water Rights

Affected Environment

Federal Parcel: There are no water rights filings for the Federal land.

Non-Federal Parcel: There are two claims to waters of the East Fork of Clear Creek which flows through the non-Federal land. These two claims are not specific to waters

on the parcel as they include use of the waters as they pass through multiple sections of land. Certificate of Water Right No 3408, issued in 1969 and valid for a period of forty years, is held by Bar T Bar Ranch, Inc. for stock watering purposes [PR#85]. This right is valid in fifteen sections of land, most of which are CNF managed lands. Application to Appropriate Water No. 33-90107 was filed in 1985 by the CNF for an *in situ* water right for wildlife and fish. Neither of the claims provides for diversion of water within the non-Federal parcel [PR#85].

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: There are no water rights filings for the Federal land and there is no effect.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not occur and there would be no impact on water rights associated with the non-Federal land.

Cumulative Effects

Under Alternative A, there would be no substantive impacts on water rights associated with the non-Federal land.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: There are no water rights filings for the Federal land and there is no effect.

Non-Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and all water rights would be conveyed together with the surface rights. Furthermore, the claims are not specific to waters on the non-Federal land. Therefore, there would be no impact on water rights associated with the non-Federal land.

Cumulative Effects

Under Alternative B, there would be no substantive impacts on water rights associated with the non-Federal land.

Soils

Affected Environment

The soils on both parcels consist of moderately to well drained tan, sandy loam formed in residuum weathered from cherty limestone and sandstone (Hendricks 1985) [PR#16].

Federal Parcel: The Federal parcel ranges in elevation from 6,840 to 6,900 feet and limestone outcrops are common.

Non-Federal Parcel: The non-Federal parcel ranges in elevation from 6,350 to 6,900 feet. Above East Clear Creek, soils are a tan, sandy loam. Steep slopes exist near the creek formed from the Kaibab limestone and cherty limestone and siltstone of the Torowep formation outcrop (McGavock et al. 1986) [PR#19].

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. The construction activities would result in soil compaction, disturbance, and loss; however, the amount would be minimized through implementation of a stormwater pollution prevention plan and Best Management Practices (BMPs) which would be required under County and State regulations. Furthermore, the design and construction of the infrastructure and homesites would follow Army Corp of Engineers and Arizona Department of Environmental Quality guidelines with regard to on-site drainage. Such plans and practices would prevent or reduce the amount of sediment moving towards East Clear Creek. Following construction, landscaping efforts would aid in stabilizing the soil. Thus, long-term soil disturbance and the potential for water quality impairment would be minimal.

Cumulative Effects

There are no substantial effects to soil disturbance associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. Impacts to soil would be similar to those discussed under Alternative A for the non-federal parcel

except that this alternative would eliminate any possibility that soil loss either during or after construction would degrade water quality in East Clear Creek.

Non-Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP MAs 3 and 12 and subsequent plans for the area. Protection of soil and water would likely remain a priority.

Cumulative Effects

There are no substantial cumulative effects to soil disturbance associated with the Proposed Action alternative.

ROADS

Affected Environment

Federal Parcel: The Federal parcel abuts FH 3 (Lake Mary Road) which would provide a paved access to the property. FH 3 is a Forest Service road maintained by the Coconino County Public Works Department. The highway is classified as a major collector road by the County, which is designed to accommodate a minimum average daily traffic of 600-800 vehicles (ADOT 2006) [PR#127a].

Non-Federal Parcel: Access to the portion of the non-Federal parcel southeast of East Clear Creek is via State Highway 87 (Hwy 87) and three numbered Forest Roads (FR): FR 95; FR 96; and FR 137. There is no direct access from Hwy 87 to that portion of the parcel located northeast of the creek. FR 513 or FR 6067 to FR 513 may be used to drive within approximately 0.25 mile of the northeast portion of the parcel. Hwy 87 is classified as a major rural collector by the Arizona Department of Transportation. The highway connects Winslow to the north-northeast with Payson to the south-southwest of the non-Federal parcel.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would ultimately occur on the existing non-Federal land. Subdivision of the parcel would require major upgrades to approximately 12 miles of Forest system roads from State Highway 87 to reach that portion of the non-Federal parcel southeast of East Clear Creek. Construction costs would likely have to be borne by the developer but ultimately the expense of maintaining the roads would likely be transferred to Coconino County taxpayers. Approximately 2 to 3 miles of Forest system

road upgrades plus approximately ¼ mile of new road construction would be required to access the northwest portion of the parcel (the lands north of East Clear Creek). Constructing a crossing of East Clear Creek within the parcel does not appear to be economically feasible.

Cumulative Effects

There are no substantial effects to roads associated with the No Action alternative

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel : Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. Access to the parcel from FH 3 would require several new intersections with subdivision entrance roads.

Non-Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP MAs 3 and 12 and subsequent plans for the area. Road access would be provided in support of the management objectives for the area.

Cumulative Effects

There are no substantial cumulative effects to roads associated with the Proposed Action alternative.

SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Affected Environment

The socioeconomic environment of the project area and vicinity includes Forest Service personnel working at the Happy Jack Ranger Station and Blue Ridge District Office and individuals with primarily seasonal homes in the area. Seasonal home density is quite low. These homes are primarily concentrated in small subdivisions located on private land surrounded by the CNF. Residential developments include the Starlight Pines, Clear Creek Pines, Tamarron Pines, Ponderosa Pines, and Mogollon Ranch subdivisions. These residential developments primarily consist of summer homes.

Executive Order 12898, dated February 11, 1994 [PR#30a], established the requirement to address environmental justice concerns within the context of federal agency operations. Environmental justice concerns include any adverse affect on minority and low-income populations within a given study area. Key indicators reviewed for environmental justice include minority populations, poverty rates, and income within a community. Due to the rural nature of the area within which the Federal and non-Federal parcels are located, this data is not available.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel. Economic benefits would be related to recreational and commodity uses of the area.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. Increased employment opportunities would be made available during construction of the infrastructure and homes. It is anticipated that some dollars would be going in the local economy of Flagstaff and surrounding communities to the south and southeast such as Payson and Camp Verde for construction and related services and materials; however, the amount of dollars going into the local economy is unknown at this time. Long-term employment opportunities would be minimal since the development is expected to be primarily residential. Therefore, impacts to socioeconomics as a result of construction would likely be positive. Long-term impacts would consist of an increased tax base for Coconino County.

Cumulative Effects

There are no substantial effects to socio-economics associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. Increased employment opportunities would be made available during construction of the infrastructure and homes. It is anticipated that some dollars would be going in the local economy of Flagstaff and surrounding communities to the south and southeast such as Payson and Camp Verde for construction and related services and materials; however, the amount of dollars going into the local economy is unknown at this time. Long-term employment opportunities would be minimal since the development is expected to be primarily residential. Therefore, impacts to socioeconomics as a result of construction would likely be positive. Long-term impacts would consist of an increased tax base for Coconino County.

Non-Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP MAs 3 and 12 and subsequent plans for the area. Economic benefits would be related to recreational and commodity uses of the area.

Cumulative Effects

There are no substantial effects to roads associated with the Proposed Action alternative.

RANGE

Affected Environment

The Federal parcel is part of the Forest Service's Pivot Rock cattle grazing allotment. The non-Federal parcel is grazed under a private arrangement between the landowner and a rancher.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative A, No Action, the exchange would not occur and the Federal parcel would continue to be grazed under an existing grazing allotment. The use of the area as a cattle movement corridor could continue for an undetermined period of time.

Non-Federal Parcel: The non-Federal parcel would be developed and no longer grazed. Because of the size of the range available to the existing non-Federal parcel user, the removal of the non-Federal parcel would not result in a major impact to the lessee.

Cumulative Effects

There are no substantial cumulative effects to range associated with the No Action alternative.

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: The Federal parcel would likely be developed, and therefore, no longer available for grazing. Because of the size of the Pivot Rock grazing allotment within which this area is included, its removal would not be substantial to the allotment use (number of permitted livestock), however the area has been important as a cattle movement corridor.

Non-Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the non-Federal parcel would be evaluated by the Forest Service for potential inclusion in a grazing allotment. However, the evaluation and resultant decision on inclusion in a grazing allotment would not be accomplished as part of the land exchange decision. A decision regarding future grazing use would be made as part of the allotment management planning process which considers impacts on vegetation, soil and watershed productivity, and wildlife habitat. Contiguous CNF lands to the parcel are within the Bar T Bar Ranch range allotment. Livestock use may be allowed if such use would improve native vegetation on the parcel. Management options to be considered will include fencing all or part of the parcel to protect watershed and soil productivity.

Cumulative Effects

There are no substantial cumulative effects to range associated with the Proposed Action alternative. This exchange and other pending activities, such as the potential development of a new Ranger Station near Clint's well will eventually necessitate a change in the historic cattle movement through this area. Alternatives to deal with this impact are being discussed with the grazing permittee.

VISUAL RESOURCES

Affected Environment

Federal Parcel: The Federal parcel contains primarily light to moderately dense stands of ponderosa pines with a grass understory, visual remains of mining activity, and is adjacent to a commercial property containing a lodge and recreational vehicle resort and FH 3. The Federal parcel is visible from FH 3. The Visual Quality Objective (VQO) for the Federal parcel and the surrounding area is 3B/M (CNF 1987) [PR#20]. The features tend to be common throughout the area and are not outstanding in visual quality. The Federal parcel and surrounding lands is classified as Modification. Modifications in this class must remain visually subordinate to the general visual composition by borrowing naturally established form, line, color and texture compatible with the natural surroundings (USDA Forest Service 1974) [PR#9].

Non-Federal Parcel: The non-Federal parcel consists of highly diverse topography and vegetation and contains a perennial stream. It is surrounded by undeveloped CNF lands. The non-Federal parcel is only visible from Forest Service roads. The CNF lands surrounding the non-Federal parcel, particularly to the west, contain a number of camp grounds and hiking/horse riding trails which lead to East Clear Creek at the western boundary of the non-Federal parcel. USFS Visual Quality Management Objectives do not apply to private land.

The VQOs for the CNF lands surrounding the non-Federal parcel are 3B/M and, in the vicinity of Clear Creek, 3A/PR. The 3B/M VQO is discussed in the previous paragraph. The 3A/PR VQO has the same sensitivity level in that less than one-quarter of the forest users have major concerns for scenic qualities. However, the "A" variety class indicates a

region along Clear Creek where the natural features are unusual or outstanding with regard to visual quality. These areas, when managed by the CNF, enable activities that introduce form, line, color, or texture which are found infrequently or not at all in the characteristic landscape and are subordinate to the characteristic landscape. The non-Federal parcel and surrounding area is classified as Modification except in the vicinity of Clear Creek which is classified as Partial Retention. (USDA Forest Service 1974) [PR#9].

The CNF LRMP [Page 60, PR#20] allows a one VQO classification movement downward in the Partial Retention and Modification visual quality objective classes.

Photographs of the Federal and non-Federal parcels are included as Appendix A.

Environmental Consequences

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. No changes in the current visual quality of the Federal parcel would immediately result from the No Action alternative.

Non-Federal Parcel: A residential subdivision on the non-Federal parcel would be visible from CNF lands, particularly by those using the recreational facilities to the west of the parcel such as Horse Crossing Trail. Forest visitors would see a subdivision in an area somewhat remote in the middle of the Forest. Approximately 200 to 300 acres of open space would remain. East Clear Creek would be undeveloped; however, the upland area totaling approximately 520 to 620 acres would be disturbed. Individuals utilizing adjoining CNF lands would view the subdivision and no longer have unobstructed visual access to that stretch of East Clear Creek traversing the non-Federal parcel. Even with landscape and architectural controls, development of the non-Federal parcel would at best meet standards for the Maximum Modification VQO classification. However, USFS Visual Management Objectives do not apply to privately held parcels.

Cumulative Effects

There are no substantial effects to visual quality associated with the No Action alternative

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision.

Approximately 30 to 60 acres of open space would remain. The open space would largely encompass the tanks formed by historical mining operations. The vegetation has been described in detail in this document. Individuals utilizing adjoining CNF lands would view the subdivision, the lodge and recreational vehicle resort and a private residence just north of the Federal parcel.

A residential subdivision on the Federal parcel would be visible from and in the foreground of (within 0.5 mile) FH 3. The subdivision would be adjacent to the existing commercial development which fronts on FH 3. This existing commercial development reduces the visual quality of the area immediately adjacent to FH 3 and the Federal parcel to Maximum Modification. With landscape and architectural controls, development of the Federal parcel would at best meet standards for the Maximum Modification VQO classification. However, the development would be consistent with existing visual characteristics to an observer on FH 3. Further, there would be no reduction in the higher quality classification 3A/PR as that VQO classification does not exist on or near the Federal parcel. No notable impact on visual quality would result from the Proposed Action alternative

Non-Federal Parcel: This alternative would retain the natural landscape and maintain the scenic nature of the larger, more diverse (vegetation and topography) non-Federal parcel.

Cumulative Effects

There are no substantial cumulative effects to visual quality associated with the Proposed Action alternative

MINERAL AND CAVE RESOURCES

Affected Environment

There is no to low potential for all mineral commodities on the Federal and non-Federal parcels with the exception of manganese within the Federal parcel. The Federal parcel has high resource potential for the mineral manganese, and manganese mining has taken place on this parcel from the early 1900s until around 1960. Mining of manganese ore in Arizona essentially ceased by 1961 due to the low cost of high-grade manganese from foreign countries (Dorr 1969) [PR#8]. According to USGS mineral commodity reports, manganese ore has not been produced domestically since at least 1985 (Schwab 2006) [PR#156].

The parcels have low potential for cave resources (Schwab 2006) [PR#156].

ALTERNATIVE A – NO ACTION

Direct and Indirect Effects

Federal Parcel: No change would occur to current use and management of the Federal parcel. If low grade manganese becomes valuable it could be obtained from this tract.

Non-Federal Parcel: Under Alternative A, No Action, the exchange would not take place and development would likely occur on the existing non-Federal land. There would be no direct or indirect effects of the development on mineral or cave resources.

Cumulative Effects

There are no substantial cumulative effects to mineral or cave resources associated with the No Action alternative

ALTERNATIVE B – PROPOSED ACTION

Direct and Indirect Effects

Federal Parcel: Under Alternative B, Proposed Action, the exchange would occur and the Federal parcel would likely be developed into a residential subdivision. There would be no direct or indirect effects of the development on mineral or cave resources.

Non-Federal Parcel: The non-Federal parcel would be managed by the CNF for public purposes under objectives of LMRP MAs 3 and 12 and subsequent plans for the area.

Cumulative Effects

There are no substantial effects to mineral or cave resources associated with the Proposed Action alternative.

ALTERNATIVE COMPARISON SUMMARY

Table 3.6 contains a comparison of the environmental effects associated with the alternatives.

Table 3.6 Alternative Summary of Effects

AFFECTED RESOURCE/ISSUE	ALTERNATIVE A NO ACTION	ALTERNATIVE B PROPOSED EXCHANGE
AIR QUALITY		
Federal Land	No effect.	Localized degradation of air quality during construction activities and following development; however would stay within regulatory limits.
Non-Federal Land	Localized degradation of air quality during construction activities and following development; however, would stay within regulatory limits.	No effect.

VEGETATION		
<p>Non-Special Status Species Federal Land</p>	<p>No change to the vegetative community would occur.</p>	<p>Residential development would result in the clearing of vegetation on approximately 450 acres. Vegetation, especially trees, would be retained to the extent practical as open space and on undeveloped portions of lots; however, several trees of all sizes would be removed.</p>
<p>Non-Federal Land</p>	<p>Residential development would result in the clearing and loss of vegetation on approximately 600 acres. Vegetation, especially trees, would be retained to the extent practical as open space and on undeveloped portions of lots; however, several trees of all sizes would be removed. Riparian resources and associated species including habitat for several Forest Service-sensitive species associated with East Clear Creek would be impacted and likely degraded with increased human presence and pressure on the area.</p>	<p>No change to the vegetative community other than treatments that may be implemented by the Forest Service would occur under this alternative.</p>
<p>Special Status Species Federal Land</p>	<p>No impacts to special status species would occur.</p>	<p>Residential development would result in land clearing and removal of habitat for two Forest Service-sensitive plant species. However, no species were observed during field surveys. The habitat on this parcel is not unique and occurs in much of the surrounding forest. Therefore the special status species habitat on this parcel is likely represented in the nearby forest.</p>
<p>Non-Federal Land</p>	<p>Residential development would result in land clearing and removal of special status species habitat. Habitat on approximately 250 acres would be retained to the extent practical as open space and on undeveloped portions of lots. High quality habitat for seven Forest Service sensitive species including a perennial stream offering a well-developed riparian environment is present.</p>	<p>No impacts to special status species would occur.</p>

<p>Invasive Species Federal Land</p> <p>Non-Federal Land</p>	<p>Three invasive-weed species occur on the Federal land and would remain under Forest Service management: bull thistle (<i>Cirsium vulgare</i>-Class B), cheatgrass (<i>Bromus tectorum</i>-Class C), and common mullein (<i>Verbascum thapsus</i>-Class C).</p> <p>Two invasive-weed species occur on the non-Federal land and would remain under private ownership: cheatgrass (<i>Bromus tectorum</i>-Class C), and common mullein (<i>Verbascum thapsus</i>-Class C).</p>	<p>Three invasive weed species would exist on privately-owned land: bull thistle (<i>Cirsium vulgare</i>-Class B), cheatgrass (<i>Bromus tectorum</i>-Class C), and common mullein (<i>Verbascum thapsus</i>-Class C).</p> <p>Two invasive-weed species would be Federally managed: cheatgrass (<i>Bromus tectorum</i>-Class C), and common mullein (<i>Verbascum thapsus</i>-Class C).</p>
WILDLIFE		
<p>Non-Special Status Species Federal Land</p> <p>Non-Federal Land</p> <p>Special Status Species Federal Land</p>	<p>Species consist of those associated with typical ponderosa pine forest. No impacts to species utilizing federal land would occur under this alternative.</p> <p>Residential development would result in loss of habitat. Wildlife species would be relocated to adjacent forest that would remain under Forest Service management. Access to East Clear Creek would be restricted which would result in impacts to wildlife. The development would be in a rural setting and some wildlife would return after construction activities are completed.</p> <p>Habitat associated with seven special status species occurs including two threatened and endangered species. No impacts to species utilizing Federal land would occur under this alternative.</p>	<p>Residential development would result in loss of habitat. Wildlife species would be relocated to adjacent forest which would remain under Federal management. Development would occur in a rural setting and some wildlife would return after construction activities are completed.</p> <p>The non-Federal parcel provides unusually high quality habitat including riparian habitat for numerous wildlife, and there would be a net gain in high-quality habitat under Forest Service management.</p> <p>Residential development would result in loss of habitat. Wildlife species would be relocated to adjacent forest which would remain under Forest Service management. The development would be in a rural setting and some sensitive species would remain in the area.</p>

Non-Federal Land	High quality habitat associated with seventeen special status species occurs including six threatened and endangered species. Residential development would result in loss of habitat for some species including designated critical habitat for the Mexican Spotted Owl. Wildlife species would be relocated to adjacent forest which would remain under Federal management. The development would be in a rural setting and some sensitive species would remain in the area after construction. Access to East Clear Creek would be restricted resulting in impacts to some wildlife species.	No impacts to species utilizing the non-Federal land would occur under this alternative. A larger area containing more varied and higher quality habitat would come under Federal management.
FIRE AND FUELS		
Federal Land	Fire and fuels would be addressed in the Clint's Fuel Reduction Project Plan currently under development. The Forest Service would be responsible for implementation.	Developers would be responsible for implementation of any treatments on the parcel. Fire and fuels in the adjacent experimental forest would be addressed in the Clint's Fuel Reduction Project Plan currently under development and implementation of fuel reduction treatments would be the responsibility of the USDA Forest Service.
Non-Federal Land	No current fuel reduction treatments have been developed or are planned.	Fire and fuels would be addressed by the Forest Service in accordance with current management of the surrounding forest.
HAZARDOUS MATERIALS		
Federal Land	No hazardous materials present; therefore, no effect.	Any hazardous materials present would be regulated; therefore, no effect.
Non-Federal Land	Any hazardous materials present would be regulated; therefore, no effect.	No hazardous materials present; therefore, no effect.
HERITAGE RESOURCES		
Federal Land	Cultural resources would continue to be protected under federal ownership; therefore, no effect.	Cultural resources identified on the parcel would be mitigated according to Forest Service and State Historic Preservation Office requirements; therefore, no adverse impact.

Non-Federal Land	Cultural resources would be subject to impacts associated with development.	Cultural resources would be offered protection under Federal ownership.
LAND USE AND INFRASTRUCTURE		
Federal Land	Dispersed recreation and grazing would continue. No infrastructure currently exists and none is planned for development.	Residential development with associated infrastructure would occur. Access and utilities are currently available to the parcel.
Non-Federal Land	Land use would change from undeveloped private land to residential development and associated infrastructure. Access and utilities would have to be brought into the parcel through Forest Service land.	The parcel would remain undeveloped; however, use would include dispersed recreation.
NOISE		
Federal Land	No effect.	Noise levels would increase during construction and post-development. The increased noise levels would impact users of the RV resort currently located adjacent to the parcel. However, the noise conditions of the area are currently degraded by the existing development in the area and the proximity to FH 3.
Non-Federal Land	Development would increase noise during construction and post-development. Due to the isolated nature of the parcel, noise would impact the new residents of the development once construction has ceased. Noise during and after construction would impact wildlife species inhabiting the parcel including the East Clear Creek drainage.	No effect.
PUBLIC ACCESS AND RECREATION		
Federal Land	Public access and recreational use on the parcel would continue. Current use is dispersed recreation. OHV use is evident.	Residential development of the parcel would restrict public access and dispersed recreation to the residents of the development.
Non-Federal Land	Development of the parcel would increase access and dispersed recreation within the parcel and adjacent Federal land.	The parcel would be open to the public including recreational use under Federal management.
SOIL AND WATER		
Federal Land	Soil and water conditions would remain unchanged.	Soil and water resources would be impacted by residential development of site. Mitigation in the form of Best Management

<p>Non-Federal Land</p>	<p>Soil and water resources would be impacted by residential development. Regulatory agencies would require mitigation of impacts to water resources. Soils would be degraded and erosion would occur on a short-term basis.</p>	<p>Practices (BMPs) would be required by the Forest Service and would mitigate impacts to water resources. Soils would be degraded and erosion would occur on a short-term basis.</p> <p>Soil and water resources would be addressed by the Forest Service in accordance with current management of the surrounding forest. The soil and water resources would not be subject to direct and indirect impacts associated with development of the parcel.</p>
<p>SOCIO-ECONOMICS AND ENVIRONMENTAL JUSTICE</p>		
<p>Federal Land</p>	<p>No effect.</p>	<p>Impacts would be similar to the No Action Alternative in that the Federal parcel would undergo residential development which would have a positive effect on socio-economics by increasing property tax revenues for Coconino County, increasing income to local businesses from the new residents in the area, and increasing revenues to construction-related businesses and utility companies. A negative impact to the social environment may result for some local residents in the form of an increased number of people occupying the region and changing the secluded nature of the area.</p>
<p>Non-Federal Land</p>	<p>The non-Federal parcel would undergo residential development which would have a positive effect on socio-economics by increasing property tax revenues for Coconino County, increasing income to local businesses from the new residents, and increasing revenues to construction-related businesses and utility companies. A negative impact to the social environment may result for some local residents in the form of an increased number of people occupying the region and changing the secluded nature of the area.</p>	<p>No effect.</p>

RANGE		
Federal Land	No effect.	No effect. The non-Federal parcel could be added to the range base less some inaccessible acreage associated with the East Clear Creek canyon. The federal parcel would be removed from the range base.
Non-Federal Land	No effect.	No effect. The non-Federal parcel could be added to the range base less some inaccessible acreage associated with the East Clear Creek canyon. The federal parcel will be removed from the range base.
VISUAL RESOURCES		
Federal Land	No effect.	Development of the Federal parcel will degrade the visual quality of the area as viewed from FH 3 but will remain consistent with the forest service designation of 3B/M (Modification). No effect.
Non-Federal Land	Development of the non-federal parcel will degrade visual quality in the area immediately surrounding the parcel due to presence of homes located in a once natural setting. Visual quality to travelers on Highway 87 would not be affected since the parcel is not viewable from the highway.	

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CHAPTER IV. COORDINATION, CONSULTATION, PREPARATION, AND LITERATURE AND CITATIONS

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APPENDIX A

**PHOTOGRAPHS OF THE FEDERAL
AND NON-FEDERAL PARCELS**

FEDERAL PARCEL



Photo 1. Iron Mine Draw with backfilled area to the right of the wash. View facing northwest.



Photo 2. Forest Service Road 122 crossing Iron Mine Draw. View facing west.



Photo 3. Happy Jack Lodge and RV Park. View facing southwest from FH 3.



Photo 4. Stock tank located in the SE¹/₄ of the project parcel. View facing north.



Photo 5. Water retained in Iron Mine Draw. View facing north.



Photo 6. Reclaimed area in the west-central section of the parcel. View facing east.



Photo 7. Base of an unfinished log cabin. View facing north.



Photo 8. Mining excavation which has created a minor depression. View facing east-southeast.



Photo 9. Mining excavation and waste pile. View facing north-northwest.



Photo 10. Mining excavation containing portion of an equipment cab. View facing northeast.

NON-FEDERAL PARCEL



Photo 11. East Clear Creek on southwest portion of non-Federal parcel.



Photo 12. East Clear Creek on southwestern portion of non-Federal parcel.



Photo 13. Cliffs adjacent to East Clear Creek on southwest portion of non-Federal parcel.



Photo 14. West side of Clear Creek Canyon. View facing west from east rim near center of non-Federal parcel.



Photo 15. View of property facing south from center of non-Federal parcel.



Photo 16. View of property facing east from center of non-Federal parcel.



Photo 17. View facing south from point where Forest Service Road 137 enters the north boundary of the non-Federal parcel.



Photo 18. View looking north into East Clear Creek Canyon near center of the non-Federal parcel. Photo taken below east rim at an elevation of 6,700 feet.



Photo 19. Burn barrel and cabin by Buckhorn Tank. View facing east-southeast.



Photo 20. Buckhorn Tank on non-Federal parcel. View facing east-northeast.

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APPENDIX B
SUMMARY OF PUBLIC COMMENTS

PUBLIC SCOPING COMMENT SUMMARY

Location in Document Where Concern is Addressed if within the Scope of this Document	Document Code	Comment #	Comment
N/A	L1	1	Supports the land exchange.
N/A	L9	2	Supports the land exchange.
Land Use and Infrastructure, page 13		3	Concern that private parcel sizes should be large (at least 1-acre) and refrain from apartment or condo development.
Land use and Infrastructure, page 13 Socioeconomics and Environmental Justice, page 48		4	Concern the area may become too densely populated.
N/A	L11	5	Supports the land exchange.
N/A	L18	6	Supports the land exchange.
N/A	L22	7	Supports the land exchange.
Alternatives Analyzed in Detail, page 11	L26	8	Would like reasons for the exchange.
Alternatives Analyzed in Detail, page 11	L27	9	The topography on the non-federal parcel is steep, so why is it necessary to acquire it?
Mineral and Cave Resources, page 53		10	What area has been affected by mining?
Alternatives Analyzed in Detail, page 11		11	What are values acquired on the newly public parcel?
Land Use and Infrastructure, page 13 and Public Access and Recreation, page 41		12	What would be the uses of the new public land?
		13	What are anticipated uses on newly public land that could be privatized?
		14	Potential impacts to land surrounding parcel.
N/A	L28	15	Concerned the mailing list for the project is not up-to-date.
Introduction, page 1	L29	16	Would like clarification on the location and acreage of the parcels for exchange.
Public Access and recreation, page 41	L30	17	Concerned about the impact of the land exchange on the annual archery gathering on the federal parcel.
N/A	L31	18	The exchange is not beneficial for the area.
N/A		19	The federal parcel is very productive with ponderosa pine and other native plants.
N/A		20	Creating a parcel of private land in the middle of National Forest is not needed.

Location in Document Where Concern is Addressed if within the Scope of this Document	Document Code	Comment #	Comment
N/A		21	Land exchanges should occur near cities isolated tracts of land.
N/A		22	If the trade is not made, the federal parcel will continue to provide wildlife habitat and limited dispersed recreation.
Land Use and Infrastructure, page 13		23	The federal parcel has been rejected in previous land exchanges. It will never be developed, so there is no advantage to the trade.
N/A	L32	24	Supports the land exchange.
N/A	L33	25	Supports the land exchange.
N/A	L34	26	Supports the land exchange.
N/A	L35	27	Supports the land exchange.
N/A		28	A fire station and a school should be built on the private ground after the exchange.
N/A	L39	29	Opposes the land exchange.
N/A		30	Private interest bought private land to exchange for federal land they could use.
Mineral and Cave Resources, page 53		31	Federal land has not really been mined.
Land use and Infrastructure, page 13		32	Developer will never develop the land they currently own.
Wildlife, page 25		33	Exchange will be detrimental to wildlife.
Public Access and Recreation, page 41, Roads, page 47, Hazardous Materials, page 37 Fire and Fuels, page 36 Water and Soils, page 42		34	Concerned new development will bring increased off-road vehicles use, fire danger, erosion, depletion of ground water, and sewer and trash problems.
N/A	L40	35	The land exchange is not really a consolidation.
N/A	L41	36	Inquiry regarding the mailing list.
N/A	L43	37	Supports the land exchange.
N/A	L44	38	Supports the land exchange.
N/A	L45	39	Supports the land exchange.
Public Access and Recreation, page 41 Roads, page 47	L47	40	Concerned about an increase in traffic.
Wildlife, page 25	L51	41	Concerned about impacts on wildlife.
Noise, page 40		42	Concerned about an increase in noise.
Public Access and Recreation, page 41 Roads, page 47		43	Concerned about an increase in traffic.

Location in Document Where Concern is Addressed if within the Scope of this Document	Document Code	Comment #	Comment
Range, page 50	L53	44	Concerned about grazing.
Public Access and Recreation, page 41		45	Concerned about increased off road vehicle use.
N/A	L54	46	Supports the land exchange.
N/A	L56	47	Supports the land exchange.
N/A	L57	48	Supports the land exchange.
N/A	L61	49	Supports the land exchange.
N/A	L63	50	Opposes the exchange.
Water and Soils, page 42	L66	51	Concerned about impacts to aquifers.
Land use and Infrastructure, page 13	L67	52	Parcel would not be developed.
Hazardous Materials, page 37		53	Concerned about trash and sewage.
Fire and Fuels, page 36		54	Concerned about fire danger.
N/A		55	Concerned about lights.
Noise, page 40		56	Concerned about noise.
Public Access and Recreation, page 41 and Roads, page 47	L69	57	Concerned about access.
N/A	L70	58	Supports the land exchange.

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