Recreation and Wilderness

Introduction
Local, State, and Federal agencies provide a number of recreation opportunities in southeastern Arizona and on lands within and adjacent to the project area. Recreation activities include casual or dispersed uses, as well as organized events. Typical recreation activities in the project area consist of motorized vehicle touring, camping, wildlife observation, nature study, bird watching, recreational prospecting, hunting and target shooting, rock and mineral collection, picnicking, mountain biking, road biking, hiking, and horseback riding.

Changes from the Draft Environmental Impact Statement
Numerous comments were received regarding changes to recreation and wilderness from mine operations. One of the most prevalent comments concerned changes or restriction to access (both temporary and permanent), which could affect recreational opportunities and result in the displacement of recreationists. Since the project area is currently used by a variety of individuals and recreationist groups, closure of the land to the public could result in these recreationists using other recreational areas that support the activity. For example, off-highway vehicle use is prevalent in the region within and surrounding the project area; should access be restricted in the project area, off-highway vehicle users would likely be displaced to other areas that support a similar recreational opportunity, such as Gardner Canyon, Louisiana and Ophir Gulches, Las Cienegas, or Greaterville. Although exact locations or levels of displaced use cannot be accurately predicted, increased off-road vehicle use in these areas due to the loss of access to the project area would likely result in increased use in other areas within the region. See the “Mitigation Effectiveness” part of this resource section and appendix B for a description of a mitigation measure to address this concern.

Commenters were also concerned with the effect of the project on tourism and recreational opportunities. In response to these concerns, the Coronado commissioned a review of existing studies to help determine these impacts (BBC Research and Consulting 2012). Details regarding these studies and the results of impact analysis are described in the “Socioeconomics and Environmental Justice” resource section, primarily under the heading of “Recreation and Tourism.” In response to comments and concerns regarding the impacts to recreational opportunity within and adjacent to the project area, additional mitigation measures were developed. These are described in appendix B and in the “Mitigation Effectiveness” part of this resource section.

In order to better preserve and maintain the nature and purposes for which the trail was established and reduce impacts on recreational experiences for trail users (in accordance with the National Scenic Trails Act and FSM 2353.43c (U.S. Forest Service 2008)), an option to relocate the Arizona National Scenic Trail to the east side of SR 83 has been added for the Barrel, Barrel Trail, and Scholefield-McCleary Alternatives. The trail location is shown in chapter 2 in figure 9 and described under the “Arizona National Scenic Trail” heading.

Issues, Cause and Effect Relationships of Concern

Issue 9: Impact on Recreation
This issue focuses on the effects of the mine operation on recreation on NFS land, including loss of access and recreation opportunities and loss of or reduction in solitude, remoteness, rural setting, and quiet. The mine may lead to permanent changes to recreation settings (Recreation Opportunity
Spectrum) and/or the type of recreation available and may result in increased pressure on public and private lands in other places to compensate for lost opportunities.

**Issue 9 Factors for Alternative Comparison**

1. Acres that would no longer meet current forest plan Recreation Opportunity Spectrum designations
2. Acres of the Coronado National Forest that would be unavailable for recreational use and miles of NFS roads lost
3. Qualitative assessment of potential for noise to reach recreation areas, i.e., audio “footprint”
4. Qualitative assessment of impacts on solitude in designated Wilderness and other backcountry areas
5. Hunter-days lost (quantity based on number of permits available and number of days in season)
6. Miles of Arizona National Scenic Trail relocated
7. Qualitative assessment of increased pressure on other areas, including roads and trails/trailheads

A summary of these issues of concern by alternative is provided in table 152.

**Summary of Effects by Issue Factor by Alternative**

<table>
<thead>
<tr>
<th>Issue Factor</th>
<th>No Action</th>
<th>Proposed Action</th>
<th>Phased Tailings</th>
<th>Barrel</th>
<th>Barrel Trail</th>
<th>Scholefield-McCleary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue 9.1: Acres that would no longer meet current forest plan Recreation Opportunity Spectrum designations</td>
<td>0.0</td>
<td>6,177</td>
<td>6,073</td>
<td>6,990</td>
<td>6,994</td>
<td>8,885*</td>
</tr>
<tr>
<td>Issue 9.1: Acres of semiprimitive nonmotorized</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>130</td>
</tr>
<tr>
<td>Issue 9.1: Acres of semiprimitive motorized</td>
<td>0.0</td>
<td>5,942</td>
<td>5,838</td>
<td>6,177</td>
<td>6,178</td>
<td>8,487</td>
</tr>
<tr>
<td>Issue 9.1: Acres of roaded modified</td>
<td>0.0</td>
<td>170</td>
<td>170</td>
<td>169</td>
<td>169</td>
<td>0</td>
</tr>
<tr>
<td>Issue 9.1: Acres of roaded natural</td>
<td>0.0</td>
<td>65</td>
<td>65</td>
<td>644</td>
<td>647</td>
<td>268</td>
</tr>
<tr>
<td>Issue 9.2: Acres of Coronado National Forest unavailable for recreational use</td>
<td>No change</td>
<td>6,177</td>
<td>6,073</td>
<td>6,990</td>
<td>6,994</td>
<td>8,885</td>
</tr>
<tr>
<td>Issue Factor</td>
<td>No Action</td>
<td>Proposed Action</td>
<td>Phased Tailings</td>
<td>Barrel</td>
<td>Barrel Trail</td>
<td>Scholefield-McCleary</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>--------</td>
<td>-------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Issue 9.2: Miles of NFS roads lost</td>
<td>0.0</td>
<td>17.5</td>
<td>17.5</td>
<td>18.5</td>
<td>18.5</td>
<td>22.8</td>
</tr>
<tr>
<td>Issue 9.3: Qualitative assessment of potential for noise to reach recreation areas</td>
<td>No change</td>
<td>Generally 40 dB or less; industrial noise would be noticed near the perimeter fence, including much of the Arizona National Scenic Trail</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action, except noise would not be evident from most of the Arizona National Scenic Trail</td>
<td>Same as for Barrel</td>
<td>Same as for Barrel</td>
</tr>
<tr>
<td>Issue 9.4: Qualitative assessment of impacts to solitude in designated Wilderness and other backcountry areas</td>
<td>No change</td>
<td>Little or no change to solitude because the majority of lands designated as semi-primitive motorized, designated Wilderness, and primitive areas are beyond 4 miles and would likely not be affected</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action</td>
</tr>
<tr>
<td>Issue 9.5: Annual hunter days lost (per year)†</td>
<td>0</td>
<td>775</td>
<td>775</td>
<td>775</td>
<td>775</td>
<td>775</td>
</tr>
<tr>
<td>Issue 9.5: Percent of hunt unit 34A on forest lands affected</td>
<td>0.0%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Issue 9.6: Miles of Arizona National Scenic Trail relocated†</td>
<td>0.0</td>
<td>7.3</td>
<td>7.3</td>
<td>12.8</td>
<td>12.8</td>
<td>12.8</td>
</tr>
</tbody>
</table>
Chapter 3. Affected Environment and Environmental Consequences

<table>
<thead>
<tr>
<th>Issue Factor</th>
<th>No Action</th>
<th>Proposed Action</th>
<th>Phased Tailings</th>
<th>Barrel</th>
<th>Barrel Trail</th>
<th>Scholefield-McCleary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue 9.7: Qualitative assessment of increased pressure on other areas</td>
<td>No change from the proposed project, although population growth is anticipated to gradually increase demand for recreation opportunities</td>
<td>Moderate increase in use expected to nearby areas such as Happy Valley, Gardner Canyon, Louisiana Gulch, Ophir Gulch, and Carouleau Gap</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action</td>
<td>Same as for proposed action</td>
</tr>
</tbody>
</table>

* The acres that would no longer meet current forest plan Recreation Opportunity Spectrum designations for the Scholefield-McCleary Alternative do not match the acres within the perimeter fence because 4 acres are on Rosemont Copper private lands, where Recreation Opportunity Spectrum designations do not apply.
† Hunter days lost for white-tailed deer, javelina, and Meam’s quail (Heffelfinger n.d. [2011]).
‡ Distances reflect miles of new trail that would be rerouted.

**Analysis Methodology, Assumptions, Uncertain and Unknown Information**

This section presents the anticipated environmental consequences that would result from implementation of the proposed action and each alternative. The analysis relies on existing data, knowledge of mine layout and activities, and professional judgment. The analysis also takes into account applicable mitigation measures identified in appendix B.

Recreation activities are interrelated and connected to other natural resources and resource uses and wilderness character. Therefore, changes in allowable uses and restrictions on other resources can affect recreational opportunities and use. This analysis was completed using the best available information, including State and Federal agency information and recreation visitation numbers. Impacts that occur under more than one alternative are discussed under the first applicable alternative and are then referenced under other pertinent alternatives.

The analysis area for assessing direct, indirect, and cumulative impacts to recreation and wilderness is defined as follows: the project area; the forest unit encompassing the Santa Rita Mountains of the Coronado National Forest, including the Mount Wrightson Wilderness and the Las Colinas section of the Arizona National Scenic Trail; the BLM administered Las Cienegas National Conservation Area east of the forest unit; Santa Cruz County; and eastern Pima County (figure 89). The forest unit encompassing the Santa Rita Mountains, referred to as the Santa Rita Ecosystem Management Area, was chosen based on the assumption that recreational users affected by mining activity would move to forest lands nearby that would provide similar recreation opportunities. Outside the forest unit boundary, additional recreation activities, areas, and opportunities were identified to describe the indirect and cumulative impacts of the alternatives.

The temporal bounds of analysis consists of four phases: premining, active mining, closure and final reclamation, and postclosure. Impacts would occur throughout all mine phases and continue into the postclosure period. Because changes to recreation opportunities, such as closing public access to the project area, would be the primary direct impact of the proposed action and action alternatives, the relative impacts of each alternative to the recreation setting have been assessed by comparing the
Figure 89. Analysis area for recreation and wilderness resources
differences in the action alternatives in terms of what would result from the construction and
operation of the Rosemont Copper Mine, along with postclosure conditions and activities.

The analysis provides quantitative and qualitative comparisons (depending on available data and the
nature of the impact) of impacts of the alternatives and describes the intensity of those impacts in the
context of the existing environment. Actions that would alter features within the analysis area could
affect the capacity of that landscape setting to provide certain recreational opportunities. These effects
are quantified where possible. Impacts to recreation are determined by changes to the recreation
setting, recreation activities, and desired recreation experience that would be brought about by the
implementation of the proposed action or action alternatives. Impacts to wilderness characteristics are
determined by changes to naturalness and opportunities for solitude and/or primitive recreation.

Short-term impacts to recreation and wilderness characteristics are those impacts that would occur
during the premining phase. Long-term impacts are those impacts that would occur during the active
mining, closure and final reclamation, and postclosure phases.

Although southeastern Arizona is a popular recreation destination and offers diverse opportunities for
outdoor recreation activities, there is little quantitative information available on recreation use levels
and trends in the analysis area. It is assumed that the displacement of the public from the project area
would result in increased visitation to nearby lands, including Madera Canyon, the Mount Wrightson
Wilderness, the Las Cienegas National Conservation Area, and the remaining roads and trails within
the Santa Rita Backcountry Touring Area. Because the exact numbers of users on the Arizona
National Scenic Trail are currently unknown, observations of volunteers of the Arizona Trail
Association are presented as an approximation of use occurring on the Arizona National Scenic Trail
through the analysis area.

Analysis for the Arizona National Scenic Trail addresses user experience on the relocated section of
the trail for each alternative. The analysis considers factors such as noise, scenic views from the
relocated trail, and access to the trail. The proposed alignment of the rerouted segment of the Arizona
National Scenic Trail on the east side of SR 83 (for the Barrel, Barrel Trail, and Scholefield-
McCleary Alternatives) was selected based on considerations of feasibility, sustainability, and
biological, paleontological, cultural, noise, and visibility conditions. More specifically, the rerouted
segment was sited relocated to preserve the nature and purposes for which the trail was established
and to promote sound multiple-use management (FSM 2353.4(c) (U.S. Forest Service 2008)). For the
proposed action and Phased Tailings Alternative, the section of Arizona National Scenic Trail would
remain on the west side of SR 83 and would be sandwiched between the mine and SR 83.

The intent of the analysis of NFSRs lost is to disclose the miles of roads under Forest Service
jurisdiction where existing public use would be lost due to the mine project. The loss of public access
to these roads is primarily a function of construction of the perimeter fence and closure of the area
within to public entry. Roads under other jurisdictions, such as private, county, or State, are not taken
into consideration in this analysis because there is no proposal to change the status of legal public
access on these roads.

Uncertain or unknown information regarding the proposed action and action alternatives that affects
the analysis of impacts to recreation resources includes the following:

- Although the perimeter and security fences would be removed following closure after
  considering grazing and safety needs, some areas may remain fenced for public safety and
protection of resources postmine. These postmine fences could limit recreation access in specific areas, but the location and duration of those fences is currently unknown.

- The postmine treatment around the edge of the pit would be constructed to protect the public from hazards. The edge treatment would likely be a combination of fencing and a vegetated berm in keeping with Forest Service practices for similar mine pit types. However, only a portion of the pit would be on NFS lands, with the remaining portion on Rosemont Copper private land. Portions of the site, including the mine pit, may remain fenced off and closed to the public indefinitely for safety reasons or as required by the Arizona State Mine Inspector.

**Affected Environment**

**Relevant Laws, Regulations, Policies, and Plans**

Management of recreation opportunities and resources is guided by a number of Federal, State, and local laws, regulations, and policies.

**Federal**

- The “National Forest Special Areas; Roadless Area Conservation Final Rule, 2001” (36 CFR 294) prohibits road construction, road reconstruction, and timber harvesting in inventoried roadless areas on Forest Service lands.
- The National Trails System Act of 1968 ((Public Law 90-543; 16 U.S.C. 1244(a)), as amended by the Arizona National Scenic Trail Act, designates the scenic nonmotorized trail through some of the most renowned mountains, deserts, canyons, and forests in Arizona; this act states, “Provide for . . . the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass.”
- Executive Order 13195 of January 18, 2001, directs Federal, State, and local government agencies to protect, connect, promote, and assist trails of all types throughout the United States, including national scenic trails.
- The Multiple-Use Sustained-Yield Act of 1960, as amended (16 U.S.C. 528), establishes the policy of Congress that national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes.
- The objectives described in FSM 2300, “Recreation, Wilderness and Related Resource Management,” chapter 2330, “Publicly Managed Recreation Opportunities,” are to maximize opportunities for visitors to enjoy and experience nature while engaging in outdoor recreation; to develop and manage sites consistent with the available natural resources and provide a safe healthful, aesthetic, nonurban atmosphere; and to provide a maximum contrast with urbanization at NFS sites (U.S. Forest Service 2006).
- FSM 2350, “Recreation, Wilderness, and Related Resource Management: Trail, River, and Similar Recreation Opportunities,” states that trail, river, and similar recreation opportunities occur over broad expanses of land or water in natural settings and accommodate recreation activities that involve relatively low-density use and limited infrastructure. These activities include hiking, caving, rock climbing, mountaineering, over-snow vehicle use, cross-country skiing, horseback riding, bicycling, off-highway vehicle use, driving for pleasure, boating, hunting, and fishing (U.S. Forest Service 2009).
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State


The “Corridor Management Plan for the Patagonia-Sonoita Scenic Road,” approved by ADOT in 2003, describes strategies to preserve and enhance the qualities that attract visitors to the scenic road (Wheat Scharf Associates 2003).

Existing Conditions

General Setting

Major recreational attractions in the Santa Rita Ecosystem Management Area include the Santa Rita Backcountry Touring Area, Mount Wrightson Wilderness, Arizona National Scenic Trail, Patagonia-Sonoita Scenic Road, and Madera Canyon. A number of developed and semideveloped campgrounds, picnic areas, day-use areas, trailheads, roads, and trails exist for recreation use in the area. Dispersed and developed recreation in the analysis area is managed by the Forest Service, BLM, State of Arizona, and Pima County.

The Coronado National Forest consists of 1,780,000 acres in southeastern Arizona and southwestern New Mexico. Elevations range from 3,000 to 10,720 feet in 12 separate mountain ranges or “sky islands,” one of which is the Santa Rita Ecosystem Management Area. The Santa Rita Ecosystem Management Area consists of 148,431 acres south of Tucson (refer to figure 89). The rich ecological diversity of the sky islands makes this area unique and provides for diverse year-round recreation.

The Santa Rita Ecosystem Management Area extend approximately 26 miles from the northwest to the southeast. The highest point is Mount Wrightson, at 9,453 feet. The northern portion of the Santa
Rita Ecosystem Management Area is a 30-minute drive from the Tucson metropolitan area, which currently has a population of more than 1 million people.

**Recreation Opportunity Spectrum Settings**

The Recreation Opportunity Spectrum is a system used by the Forest Service to inventory and classify NFS lands in terms of the range of recreation experiences, opportunities, and settings. Although recreation activities, areas, and opportunities occur outside the forest unit boundary within the analysis area, Recreation Opportunity Spectrum settings only apply to NFS lands and are only described here for NFS lands in the Santa Rita Ecosystem Management Area.

The Recreation Opportunity Spectrum represents a process in which the following occurs: (1) the recreation opportunities in an area are identified based on the area’s setting and activities; and (2) the area is then assigned to one of seven categories that define management objectives. Recreation Opportunity Spectrum settings within the Santa Rita Ecosystem Management Area are primitive, semiprimitive nonmotorized, semiprimitive motorized, roaded modified, roaded natural, rural, and urban (figure 90). Table 153 summarizes the existing Recreation Opportunity Spectrum settings for NFS lands within the Santa Rita Ecosystem Management Unit.

<table>
<thead>
<tr>
<th>Recreation Opportunity Spectrum Setting</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primitive</td>
<td>22,118</td>
</tr>
<tr>
<td>Semiprimitive nonmotorized</td>
<td>9,094</td>
</tr>
<tr>
<td>Semiprimitive motorized</td>
<td>90,060</td>
</tr>
<tr>
<td>Roaded modified</td>
<td>16,634</td>
</tr>
<tr>
<td>Roaded natural</td>
<td>10,174</td>
</tr>
<tr>
<td>Rural</td>
<td>148</td>
</tr>
<tr>
<td>Urban</td>
<td>203</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>148,431</strong></td>
</tr>
</tbody>
</table>

Source: Forest Service (1986).

The characteristics of the seven different Recreation Opportunity Spectrum settings as described below are based on “setting indicators,” including access, remoteness, naturalness, facilities and site management, social encounters, visitor impact, and visitor management (U.S. Forest Service n.d. [1986]).

Primitive settings are large wilderness or wilderness-like areas where people can enjoy a natural setting, challenge, and solitude. These areas have no facilities other than trails and rarely have large numbers of visitors. Primitive areas must total at least 5,000 acres and are usually at least 1 mile away from roads. Because the Coronado National Forest is mountainous and rugged, primitive feelings and solitude are usually experienced at much shorter distances from roads than in areas that are less mountainous. Primitive Recreation Opportunity Spectrum settings are managed to be essentially free of human-made structures. Motor vehicles and other motorized equipment are not permitted within designated wilderness areas.
Figure 90. Recreation Opportunity Spectrum and proposed action
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The primitive setting within the Santa Rita Ecosystem Management Area occurs entirely within the Mount Wrightson Wilderness and is characterized by a largely unmodified natural environment. The potential for interaction between visitors is low, and evidence of other people is minimal.

Semiprimitive nonmotorized settings are areas without motorized roads that people use for a wide variety of activities but primarily for dispersed recreation. These areas have no facilities other than trails and are similar to primitive areas except they can be smaller, are closer to roads, and can have large numbers of visitors. Typically, semiprimitive nonmotorized areas occur outside the Mount Wrightson Wilderness, but in the heavily visited areas of the wilderness, the setting is classified as semiprimitive nonmotorized.

Semiprimitive motorized settings are areas with primitive roads (i.e., high-clearance and/or 4-wheel-drive). People use these areas for a wide variety of recreation activities, including birding, scenic touring, solitude, hunting, off-highway vehicle use, dispersed camping, hiking, horseback riding, mountain biking, rock collecting, and firewood cutting. Typically, the only facilities in these areas are primitive roads and trails. Semiprimitive motorized settings are characterized as having motorized access in a predominantly natural or natural-appearing environment that is moderate sized to large (generally greater than 2,500 acres). Interaction between users is low, but there is often evidence of other users. Motorized use is permitted on roads and motorized trails. In this setting, there is a moderate probability of experiencing isolation from the sights and sounds of humans and self-reliance through the application of outdoor skills in an environment that offers challenge and risk.

The majority (90,000 acres, or 61 percent) of the Santa Rita Ecosystem Management Area is managed under the semiprimitive motorized Recreation Opportunity Spectrum setting.

On the Coronado National Forest, roaded modified applies to areas along roads that are passable by low-clearance vehicles and usually have not been altered by management activities. There may be trails, dispersed campsites, historic sites, and mining and ranching facilities along the route. The natural setting is the focus, and visitors are often looking for a place to drive off-road, set up their own camp, explore the backcountry, or find solitude. This setting provides the visitor with opportunities for a high degree of interaction with the natural environment and moderate challenges and risks in using outdoor skills. The roaded modified setting in the Santa Rita Ecosystem Management Area consists of Box Canyon Road, Big Casa Blanca Canyon Road, NFSR 92, the first 4 miles of NFSR 4104, NFSR 624 to the Florida Work Center, and roads to the Kentucky Camp. Additionally, roads that access private parcels are considered roaded modified.

Rooded natural settings are road corridors where people drive to enjoy the scenery and are often on their way to a developed site, such as a campground, picnic area, or visitor center. The natural setting is the focus, but nodes of Recreation Opportunity Spectrum urban and rural settings are commonly found along these corridors. Roads are passable by low-clearance vehicles. Individual buildings and structures (such as small administrative sites or summer homes) are occasionally encountered within these corridors. The roaded natural setting is characterized by a natural-appearing environment with increasing evidence of the sights and sounds of people. Interaction between users may be low to moderate, but evidence of other users is prevalent. Opportunities for both motorized and nonmotorized forms of recreation are available. The roaded natural setting in the Santa Rita Ecosystem Management Area consists of Madera Canyon Road, Whipple and Mount Hopkins Road, and SR 83.

Rural settings include most developed recreation areas (such as campgrounds), as well as many other developed areas. The natural setting is the attraction, but there are facilities such as buildings, roads,
walkways, and picnic tables. Rural areas are generally very small and constitute a very small percentage (<1 percent) of the forest. The rural setting in the Santa Rita Ecosystem Management Area consists of campgrounds, picnic areas, a lodge along Madera Canyon Road, and Kentucky Camp.

Urban settings are areas of concentrated use and areas where facilities dominate the natural setting. Urban areas are generally very small and constitute a very small percentage (<1 percent) of the Santa Rita Ecosystem Management Area. Characteristics include intensive use, costly facilities, large numbers of people, and/or specialized activities. Urban settings in the Santa Rita Ecosystem Management Area include the Mount Hopkins astrophysical facilities (including the Smithsonian Visitor Center base camp) and the Melendrez Pass electronic site.

**Designated Wilderness**

**General Description and Characterization**

Of the seven wilderness areas shown in figure 89, only the Mount Wrightson Wilderness and Saguaro Wilderness are discussed below because of their close proximity to the project area and the potential direct and indirect impacts to these wilderness areas.

The Mount Wrightson Wilderness was designated under the Arizona Wilderness Act of 1984 and is managed by the Forest Service as part of the National Wilderness Preservation System. Wilderness characteristics are cumulatively identified by the Wilderness Act of 1964 as being untrammelled by humans, natural, and undeveloped and as having outstanding opportunities for solitude or primitive settings, unconfined forms of recreation, and other supplementary characteristics such as scientific, educational, scenic, and historic values. The Mount Wrightson Wilderness is managed to preserve and protect wilderness characteristics in accordance with the Arizona Wilderness Act of 1988 and the Wilderness Act of 1964.

The Mount Wrightson Wilderness occurs within the Santa Rita Ecosystem Management Area forest unit. Mount Wrightson is the highest point in the area around Tucson. At 9,453 feet, the peak is 7,000 feet higher than the surrounding savanna and desert. Mount Wrightson’s distinctive pyramid profile is visible from much of southeastern Arizona and adjoining areas in Mexico. There is a total of approximately 50 miles of trails leading into the Mount Wrightson Wilderness, ranging from well-used pathways to primitive routes. Major trails in the wilderness include Old Baldy, Super, Florida Canyon, Crest, Agua Caliente, East Sawmill Canyon, Cave Canyon, Walker Basin, Josephine Canyon, and Temporal Gulch. These trails cross diverse landscapes, including forests, canyons, and ridgelines, and provide hikers with panoramic views of the surrounding area. From the summit of Mount Wrightson, there is a 360-degree view of all of southern Arizona and into Mexico.

Additionally, the project area is clearly visible from the summit of Mount Wrightson (see the “Visual Resources” resource section of chapter 3). The main access trailhead to the Mount Wrightson Wilderness is the Mount Wrightson trailhead in Madera Canyon. The Old Baldy and Super Trail trails are summit trails for Mount Wrightson. Access to the peak from these trails is treacherous during winter months and largely inaccessible.

The Saguaro Wilderness, managed by the National Park Service, is in the Rincon Mountain District of Saguaro National Park, east of Tucson and approximately 25 miles north of the project area. The Saguaro Wilderness was designated in 1976 and is managed to preserve and protect wilderness characteristics in accordance with the Wilderness Act of 1964. Although views of the project area would be in the background from portions of the Saguaro Wilderness, this is an area where high-quality scenic views could be affected (see the “Visual Resources” resource section of chapter 3).
In addition to designated wilderness, the Forest Service “Roadless Rule” (U.S. Forest Service 2001) conserves roadless values while allowing for current public access and recreation opportunities, including hiking, camping, hunting, and fishing. The 6,077-acre Santa Rita Inventoried Roadless Area is in the north end of the Santa Rita Ecosystem Management Area, north of the project area. New road construction or reconstruction is generally prohibited in inventoried roadless areas. Additionally, the Whetstone Mountains, including the 7,711-foot Apache Peak, located east of the Santa Rita Ecosystem Management Area, constitute another inventoried roadless area.

Visitation

The Coronado does not maintain quantitative visitor counts for the Mount Wrightson Wilderness; however, the organization Friends of Madera Canyon operates a road counter at the entrance to Madera Canyon. In 2008, approximately 199,599 visitors entered Madera Canyon (West 2009). Because of Tucson’s proximity, milder temperatures, and ease of access through Madera Canyon, hikes into the Mount Wrightson Wilderness, including the trails leading to Mount Wrightson, are some of the most popular hikes in the analysis area, though few hikers reach the summit.

Access

Primary access to the Mount Wrightson Wilderness is through the Madera Canyon Recreation Area along paved NFSR 70. NFSR 183 is a dirt road suitable for most passenger vehicles and leads to the Agua Caliente trailhead. Additional wilderness trailheads are at the end of NFSRs 62A, 4084, 92, 165, 785, and 72. The nonmotorized Arizona National Scenic Trail also crosses the east arm of the wilderness.

Recreation Places

In addition to dispersed recreation and Recreation Opportunity Spectrum settings, there are a number of other recreation resources and permitted activities within the analysis area. These are described further below and shown in figure 91.

Patagonia-Sonoita Scenic Road

In 1985, the Parkways, Historic, and Scenic Roads Advisory Committee designated the 52-mile-long Patagonia-Sonoita Scenic Road (Wheat Scharf Associates 2003). The committee’s goal was to designate Arizona roads that have unique scenic or historic resources and whose resources were most at risk (Wheat Scharf Associates 2003). The Patagonia-Sonoita Scenic Road traverses landscapes and terrain representative of southern Arizona, with its sweeping, open vistas and semidesert grasslands. The scenic road also winds east and south of developing areas along I-10 east of Tucson.

The Patagonia-Sonoita Scenic Road begins at I-10 and follows SR 83 south from Vail to Sonoita, where it intersects with SR 82, and continues on to Patagonia and on to Nogales. The highest point of the scenic road occurs where it crosses the pass between the Empire Mountains to the east and the Santa Rita Mountains to the west. Lands of the Coronado National Forest through which the scenic road travels are identified as having extremely high public value (Wheat Scharf Associates 2003).

From the Patagonia-Sonoita Scenic Road, motorists can visit several natural destination points, including the Las Cienegas National Conservation Area, Patagonia Lake State Park, and Sonoita Creek Preserve (Arizona Scenic Roads 2009). This is part of a very popular day trip for motorists in the analysis area and is discussed further in both the “Visual Resources” and “Socioeconomics and Environmental Justice” resource sections of chapter 3.
Figure 91. Recreation sites (note: the majority of hunt unit 34A is located beyond the forest boundary)
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Arizona National Scenic Trail

The Arizona National Scenic Trail, which is more than 800 miles long, was designated in a 2009 amendment to the 1968 National Trails System Act. The National Trails System Act of 1968, as amended, establishes scenic trails to provide maximum outdoor recreation potential and for the conservation and enjoyment of scenic, historic, natural, or cultural qualities of the areas through which they travel. The Arizona National Scenic Trail is a nonmotorized, multiple-use recreation trail that stretches from the Mexico border to the Utah border. The trail is enjoyed by equestrians, hikers, and mountain bikers. The Santa Rita and Las Colinas passages of the Arizona National Scenic Trail are approximately 26 miles long through the Santa Rita Mountains (Arizona Trail Association 2009).

The original vision for the Arizona National Scenic Trail was to “provide opportunities to experience and reflect upon Arizona’s diverse cultural and natural heritage along the trail corridor” (Arizona State Parks 1995). The current trail route has evolved over time to connect scenic settings representative of Arizona and to include areas of scenic beauty to enhance visitor experiences. In order to manage for those opportunities and for a more scenic and primitive experience along the Arizona National Scenic Trail, the Forest Service, BLM, National Park Service, and Arizona State Parks identified the need for a 1,000-foot-wide corridor along the trail to serve as a buffer from incompatible activities (Arizona State Parks 1995).

There are a number of actions that have occurred or are planned along the trail that have affected, or could eventually affect, recreation opportunities and the overall scenic settings for which the trail was designated. These include power transmission line and utility corridor construction and ROW clearing, prescribed burning to reduce wildland fire risks, naturally occurring fires, rock quarrying, and forest restoration projects (specific wildland fire occurrences and locations are listed in the “Visual Resources” resource section of chapter 3).

Santa Rita Backcountry Touring Area

Backcountry motorized touring has become increasingly popular throughout the Southwest and southeastern Arizona. The majority (90,060 acres, or 61 percent) of the Santa Rita Ecosystem Management Area is managed under the semiprimitive motorized Recreation Opportunity Spectrum setting. The Coronado has further classified much of this setting, plus other Recreation Opportunity Spectrum settings, as the Santa Rita Backcountry Touring Area, which contains roads managed in part for motorized recreation. The Santa Rita Backcountry Touring Area is wholly contained within the Santa Rita Ecosystem Management Area (see figure 91), and contains a network of 285 miles of NFSRs for motorized recreation. The use of motorized vehicles throughout the Santa Rita Ecosystem Management Area is restricted to existing NFSRs (U.S. Forest Service 1986), as currently depicted on the Motor Vehicle Use Map. The topography and rugged soil surfaces in the Santa Rita Backcountry Touring Area help discourage off-road travel, which is prohibited.

The Rosemont off-highway vehicle trailhead (staging area) for 4-wheel-drive, all-terrain vehicles and motorcycle touring is just north and east of the project area and west of SR 83 (see figure 91). The Rosemont area is one of the primary and the most popular off-highway vehicle riding areas in the Santa Rita Backcountry Touring Area. The Coronado has encouraged motorized recreation in this area for approximately 15 years through recreational trail grants, management direction, enforcement efforts and on-the-ground presence (Arizona State Parks 2010). Many dispersed campsites are available along NFSR 231, where forest visitors can camp and ride. By managing for motorized recreation in the Rosemont area, the Coronado has taken motorized use pressure off of areas such as Gardner Canyon, Louisiana and Ophir Gulches, and Greaterville (Elek 2010).
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The Box Canyon off-highway vehicle staging area is south of the project area. The 4-wheel-drive road that connects Box Canyon with the Rosemont off-highway vehicle staging area crosses the project area.

Other Sites

Other recreation sites in the Santa Rita Mountains include Kentucky Camp Historic Site, Elephant Head Mountain Bike Trail, and the Mount Hopkins Complex (Smithsonian Visitor Center, Whipple Picnic Area, and telescope tours). Because of the distance and topographic screening from the project area, recreation opportunities at these sites are expected to be minimally impacted.

Hunting is an important traditional recreational activity across Arizona and within the Santa Rita Mountains. In addition to being a recreational activity, hunting is also considered to be an important part of the heritage and culture of participants across Arizona. The Santa Rita Ecosystem Management Area is within AGFD hunt unit 34A. Species for hunting in this hunt unit include black bear, javelina, mule deer, white-tailed deer, cottontail rabbit, mourning dove, Mearn’s quail, and Gambel’s quail. Mearn’s quail, in particular, are limited to Madrean oak savannah habitat, which can be found within the area of analysis. Hunt unit 34A encompasses an area that ranges from Nogales on the south, beyond Green Valley on the north, with I-19 as its western boundary and SRs 83 and 82 as its eastern boundary. Thus, this hunting unit contains an area much larger than the Rosemont Copper Project area. Species of huntable game evident within the project area include white-tailed deer, javelina, and Mearn’s quail (Arizona Game and Fish Department 2012).

Hunting is permitted throughout most of the forest under Arizona game and fish laws and rules, established in ARS, Title 17, Chapter 3, “Game and Fish,” Article 17-309. It is unlawful for a person to discharge a firearm within 0.25 mile of an occupied farmhouse or other residence, cabin, lodge, or building without permission of the property owner or resident. Specifically, hunting is not permitted within 0.25 mile of Madera Canyon or occupied private parcels throughout the hunt unit.

The annual average number of permits issued for white-tailed deer on Forest Service lands in hunt unit 34A is 1,940, and the annual average number of permits for javelina on Forest Service lands in hunt unit 34A is 1,100 (Heffelfinger n.d. [2011]). This is not inclusive of all hunting activity that has occurred on Forest Service lands within hunt unit 34A and does not represent permits issued for other species, or for general hunting permits.

The Las Cienegas National Conservation Area and Acquisition Planning District in southeastern Arizona was designated on December 6, 2000. The 42,000-acre National Conservation Area consists entirely of public lands managed by the BLM’s Tucson Field Office and was designated “in order to conserve, protect, and enhance the unique and nationally important aquatic, wildlife, vegetative, archaeological, paleontological, scientific, cave, cultural, historical, recreational, educational, scenic, rangeland and riparian resources and values of the public lands within the National Conservation Area, while allowing livestock grazing and recreation to continue in appropriate areas” (Bureau of Land Management 2003).

The Las Cienegas National Conservation Area offers opportunities for dispersed and permitted recreation activities consisting of hiking, camping, mountain biking, picnicking, horseback riding, bird watching, backcountry road touring, hunting, and photography. Additionally, a 10.5-mile-long stretch of Cienega Creek has been rated eligible for national wild and scenic river designation (Bureau of Land Management 2003).
Madera Canyon is on the western slopes of the Santa Rita Mountain range, southwest of the project area. The main corridor through Madera Canyon is managed by the Coronado as Recreation Opportunity Spectrum roaded natural, with nodes of rural. The higher elevations of Madera Canyon provide relief to the residents of southeastern Arizona during the hot summer months and allow access to snow during the winter.

Madera Canyon is a popular staging area for the many hiking trails throughout the Santa Rita Ecosystem Management Area. A world-renowned location for bird watching, Madera Canyon is a major resting place for migrating species, while the extensive trail system of the Santa Rita Ecosystem Management Area is easily accessed from the canyon’s campground and picnic areas. More than 230 species of birds have been recorded in the canyon, including 15 different hummingbird species (Friends of Madera Canyon 2009). The vegetation, combined with the perennial streams that carved out this canyon, helps to sustain the diverse wildlife species that breed and visit here.

Existing Use Levels and Trends

Arizona has one of the fastest rates of population growth in the United States. At statehood in 1912, Arizona’s population was approximately 200,000. In 2005, the population had increased to more than 6,000,000 (Arizona State Parks 2007). The U.S. Census Bureau predicts that Arizona’s population will grow another 50 percent by 2025. As such, Arizona can no longer be considered a sparsely populated State, and the population of southeastern Arizona continues to grow. In 2009, the population of Pima County, including the Tucson metropolitan area, was 1,048,796 residents. The population of southeastern Arizona is projected to increase to 1,271,912 by 2020 (Arizona Department of Commerce 2006). This growth is partially attributable to southeastern Arizona’s appeal as a year-round recreation destination that offers diverse opportunities for outdoor recreation activities.

As a result of increasing population and increasing interest in natural resource based outdoor recreation opportunities, the demands for outdoor recreation activities and opportunities are expected to continue to grow (Recreation Technical Advisory Team 2003). The Patagonia-Sonoita Scenic Road is a very popular day trip for motorized touring. Traffic on the road includes both scenic touring and daily commuting. Traffic on SR 83 from Sahuarita Road to I-10 and SR 82 in Sonoita tends to be considerable due to the lack of other major thoroughfares in the area. Exact average annual daily traffic is listed in the “Transportation/Access” resource section. As the population of Arizona is expected to continue to grow over time, it is assumed that traffic on the scenic road will increase as a result of tourism and outdoor recreation. Forecasts for traffic volume indicate a substantial increase in traffic on SR 83 between Sahuarita Road and I-10 and SR 82 in Sonoita (refer to the “Transportation/Access” resource section for a quantitative analysis of traffic volume increases). Although no trail counters are currently in place for the Arizona National Scenic Trail, volunteers with the Arizona Trail Association report observing an increase in hiking, mountain biking, and equestrian use of the Las Colinas Passage since the recent national scenic trail designation. Furthermore, use is expected to increase over time (Arizona Trail Association 2009).

In addition, there has been a recent increase in club and organized mountain bike rides along the Arizona National Scenic Trail in the vicinity of the project area. An unofficial mountain bike challenge, called Arizona Trail 300, has taken place since 2006 and follows portions of the Arizona National Scenic Trail near the project area. From Box Canyon Road, the unofficial event course continues on to Oak Tree Canyon. At Oak Tree Canyon, the route follows the trail to Rosemont Junction Road. In 2010, 25 riders participated in Arizona Trail 300 (Racing the Arizona Trail 2010).
As knowledge of the Arizona National Scenic Trail grows and the population of southern Arizona increases, participation in this unofficial event and similar group ride opportunities is expected to grow.

Several equestrian groups use the Las Colinas portion of the Arizona National Scenic Trail for equestrian events, such as group rides, and endurance rides. These groups include the Arizona State Horsemens Association, Backcountry Horsemens of Arizona, Saguaro Horsemens, Southeast Horsemens Association, and Tucson Saddle Club. There are also several public stables that host tours along the Arizona National Scenic Trail.

In addition to the popularity of nonmotorized recreation activities in southeastern Arizona, the popularity of motorized recreation and use of off-highway vehicles has rapidly grown over the past decade. Off-highway vehicles are four times as popular as they were a decade ago, and in the West, off-highway vehicle sales are double the national average (Arizona State Parks 2007). Off-highway use is an increasingly popular activity in many areas on the Coronado National Forest (especially in Redington Pass and the northern Santa Rita Ecosystem Management Area), and off-highway recreation is one of the fastest growing activities on public lands in the nation (Arizona State Parks 2007). A 2008 random household survey conducted for the 2010 Arizona Trail Plan indicates that motorized trail users represent 1,027,191, or 22 percent, of adult Arizona residents (Arizona State Parks 2009).

The Friends of Madera Canyon operate a visitor information station and road counter at the entrance to Madera Canyon on most weekends throughout the year. Madera Canyon’s proximity to Tucson, cooler temperatures, and diverse recreation opportunities make it one of the more popular recreation destinations in southeastern Arizona. The Friends of Madera Canyon recorded 66,533 vehicles entering the canyon in 2008. The Coronado assumes an average of three visitors per vehicle, for a total of 199,599 visitors to Madera Canyon in 2008 (Friends of Madera Canyon 2009). Because of increasing population and increasing interest in natural resource based outdoor recreation opportunities, visitation at Madera Canyon is expected to grow in the future.

The Tucson Sector of the U.S. border with Mexico is considered the busiest sector of the border; the sector covers 262 miles from the Yuma county line to the Arizona/New Mexico State line. The Nogales U.S. Border Patrol Station, within the Tucson sector, is now the largest U.S. Border Patrol station in the United States. U.S. Border Patrol agents in the Nogales Station patrol 1,100 square miles, including 32 miles of the border. The Coronado National Forest makes up a large portion of the western sector of the Nogales Station’s responsibility. Undocumented immigration, drug smuggling, and increased U.S. Border Patrol activities have led to increased potential for dangerous encounters to recreation visitors on the Coronado National Forest.

**Commercial Outfitter and Guide Use**

Federal law requires a permit for special uses, such as commercial or group activities, on national forests. Commercial activities may consist of outfitter and guide services, filming, photography, or campground management. Additionally, group recreation events may also require a special use permit.

Four to five outfitter and guide services for hunting are currently permitted to operate throughout the forest, including the Santa Rita Ecosystem Management Area. Additionally, up to 20 different bird-watching guides are permitted to operate in the Madera Canyon and Gardner Canyon areas. Currently, one all-terrain-vehicle touring service operates in the project area, and one equestrian tour
service is known to make use of the Arizona National Scenic Trail. Hang gliding and hang-gliding instruction and guiding are permitted by the Forest Service in Box Canyon, south of the project area.

Other special uses are considered on a case-by-case basis as applications are received. Two annual recreation event permits are currently issued for clubs in the Fish Canyon area off of Gardner Canyon Road. One permit is for an archers’ and bow hunters’ club, and one is for a muzzleloaders’ club.

Environmental Consequences

Direct and Indirect Effects of Each Alternative

No Action Alternative

Under the no action alternative, the project would not be developed, and existing recreation uses would continue under current conditions. The settings, landscape, recreation sites, roads, and trails within the analysis area would continue to be affected by current conditions and ongoing actions. Routine maintenance of roads, the Arizona National Scenic Trail, and other facilities would continue.

Access to public land in the area would continue, and traffic levels on area roads would likely increase as regional population growth occurs. Existing uses of the project area would continue and likely increase with population growth. Activities would include dispersed recreation use such as driving for pleasure, hunting, off-highway vehicle use, camping, mountain biking, hiking, and horseback riding on the Arizona National Scenic Trail, bird watching, target shooting, fuelwood cutting, and other activities.

Recreation Opportunity Spectrum

Under the no action alternative, recreation opportunities in the analysis area would continue to be managed consistent with the Recreation Opportunity Spectrum setting indicators and objectives of the Forest Service. The semiprimitive motorized setting, which makes up the majority of the project area, would continue to be affected by existing conditions under the no action alternative.

Designated Wilderness

Designated wilderness and Forest Service roadless areas would continue to be affected by existing conditions under the no action alternative. Additionally, there would be no change to visitor experiences within designated wilderness or Forest Service roadless areas as a result of the no action alternative.

Recreation Places

There would be no restrictions on current access to recreation places and opportunities under the no action alternative. Recreation places in the analysis area would remain available for recreation activities such as motorized touring, hunting, and other types of dispersed recreation. Hunting opportunities in the analysis area under the no action alternative would continue to be maintained by the wildlife game inventory, with monitoring, translocation, and actions to increase game animal population numbers. The Las Colinas section of the Arizona National Scenic Trail would remain the same, and no reroutes would be required.

Existing Use Levels and Trends

There would be no change to recreation use levels and trends in the Santa Rita Ecosystem Management Area under the no action alternative.
**Impacts Common to All Action Alternatives**

Impacts that would occur under all of the alternatives are presented here. Impacts that are unique to individual or groups of alternatives are then presented for each alternative in the sections below. Impacts to recreation are closely tied to visual quality. The “Visual Resources” resource section of this chapter includes a detailed analysis and visual simulations of the project from recreation sites as well as other critical views. Where appropriate in the following analysis, the “Visual Resources” resource section is referenced for a more detailed description of the analysis of impacts.

Within the project area, there would be direct disturbance from the mine pit, waste rock facility, dry-stack tailings facility, mine plant and infrastructure, and heap leach pad (except Barrel Alternative). There would be additional disturbances outside the project area as a result of the primary access road, utility maintenance road, and utility corridor. Perimeter fencing and public exclosure from the project site is the primary factor leading to a reduction in acres available for recreation opportunities.

The primary access road would be paved and would provide access to the project entrance (as further described in chapter 2). Road improvements by ADOT would likely not impact recreationists in the long term; however, during construction, access may be restricted or limited. The primary access road would be closed to the public at the perimeter fence.

All action alternatives include the following connected actions, which are addressed as direct and indirect impacts: relocation of an existing electrical distribution line; construction and eventual removal of the water supply pipeline; construction and eventual removal of the electrical distribution line; relocation of a segment of the Arizona National Scenic Trail; and highway maintenance and improvements on SR 83 associated with the ADOT encroachment permit. Please refer to chapter 2 for a description of these actions.

All action alternatives would also result in widening and turn lanes at the intersection of SR 83 and the primary access road, as well as the maintenance and improvement of SR 83, including an overlay between I-10 and the primary access road. This road segment, which is under ADOT jurisdiction, would require maintenance and improvements to mitigate traffic impacts resulting from the proposed project. Maintenance and improvements would include a pavement overlay, restriping, raised guardrails, signage, and paving of three existing bus pullouts (see chapters 1 and 2 for details).

Each alternative would exclude hunters from access to approximately 4 to 5 percent of NFS lands within AGFD hunt unit 34A. Exclusion of the proposed action lands would result in the loss of roughly 775 hunter days annually (note: annual hunter days are calculated as the available permits (huntable species) by length of the hunting season (in days)). Species of huntable game evident within the project area include white-tailed deer, javelina, and Mearn’s quail (Arizona Game and Fish Department 2012). Although only 4 percent of the NFS lands are within the hunt unit, impacts include qualitative losses such as the loss of areas with a tradition and history of hunting activity. There could also be a loss of hunter opportunities outside the project footprint as a result of increased mortality of game species from vehicle collisions on access roads to the mine and on SR 83, along with fewer game animals in the area due to increased noise, vibration, artificial lighting, traffic and general industrial activities, and loss of native vegetation during the mine operation and postmine closure (see the “Biological Resources” resource section in this chapter).

Bird watching is a popular activity in the project area and surrounding landscape. All action alternatives would exclude public access from the area within the perimeter fence; thus, opportunities for birding would be reduced. The “Biological Resources” resource section in this chapter indicates
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that all action alternatives would impact some species of migratory and resident birds (see the “Migratory Birds” part of “Impacts Common to All Action Alternatives” in the “Biological Resources” resource section in this chapter). Activities that would affect birding in and adjacent to the project area include direct loss of habitat; noise; dust; artificial night lighting; increased traffic; changes to springs, stock tanks, and riparian vegetation; and pit lake water quality. These actions may reduce birding opportunities in the area directly surrounding the project area for all action alternatives. However, direct and indirect impacts to birds are expected to decrease with distance from the project area, where the effects of noise, artificial night lighting, and dust decline. There are no anticipated impacts to birding in Madera Canyon, a popular birding area, because of its distance from the project area. Impacts analysis does not predict direct or indirect impacts to habitat or water sources in Madera Canyon; disturbances such as noise, night lighting, dust, and increased traffic are not expected or would be minimal in this location.

Recreation Opportunity Spectrum

A direct loss of acreage available for recreation activities would occur under all action alternatives. Each of the action alternatives would result in the direct removal of differing amounts of acres from public entry, which represents the area that would be enclosed by perimeter fencing for public safety purposes. It is assumed that all areas on Forest Service land, other than that excluded for safety around the pit, would eventually be opened to public access postmining. The area of the pit would be lost for public access in perpetuity. Based on current knowledge, the steep and unstable slopes and pit lake are projected to be unsafe for future public access. However, the exact area and timing of opening areas to public access would need to be evaluated at the end of mining activities. While not anticipated, some areas (other than the pit) may be not be safe for public access, while others may require public access restrictions until reclamation activities have been successfully completed.

In addition to the direct loss of acreage available for recreation activities and opportunities, a change from the existing undeveloped, semiprimitive setting of the project area and surrounding area to a more developed, industrialized setting would occur under all action alternatives. Evaluating the specific effect of each of the alternatives on the Recreation Opportunity Spectrum setting is related to how the “setting indicators” are met both during and after mine operations.

During premining, active mining and operation, and closure and final reclamation, the affected areas would not be compatible with the established setting indicators for any of the Recreation Opportunity Spectrum settings present. Because the semiprimitive motorized setting makes up a majority of each alternative action area (88 to 96 percent), table 154 summarizes the semiprimitive motorized indicators both during and after mine operations (U.S. Forest Service n.d. [1986]).

The industrialized setting of the mine would include increased industrial noise from blasting, mine related traffic, and equipment operation (including backup alarms). Traffic, construction, and equipment operation within the project area would result in increased noise, ranging from 80 dBA near the plant site within the project area to 30 to 40 dBA at the fenceline surrounding the project area. A noise level of 80 dBA is comparable to the sound of a forklift or front-end loader from 50 feet away. A noise level of 30 to 40 dBA is comparable to the sound of a quiet suburban area at night.
### Table 154. Semiprimitive motorized setting indicators*

<table>
<thead>
<tr>
<th>Recreation Opportunity Spectrum Setting Indicator</th>
<th>During Mine</th>
<th>Postmine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>Inconsistent/Unacceptable. There would be no public access into mine site.</td>
<td>Normal/Fully compatible, although there would be fewer roads and less access (than premine existing conditions).</td>
</tr>
<tr>
<td>Remoteness</td>
<td>Unacceptable. Area would be dominated by sights and sounds of human activities.</td>
<td>Inconsistent. There would be few sounds of human activities, but views of the mine would dominate until long-term reclamation is successful.</td>
</tr>
<tr>
<td>Naturalness</td>
<td>Unacceptable. Mine site would not be natural (see the “Visual Resources” resource section).</td>
<td>Unacceptable. Mine site would not be natural (see the “Visual Resources” resource section).</td>
</tr>
<tr>
<td>Facilities and Site Management</td>
<td>Not applicable. There would be no public facilities.</td>
<td>Normal. There would be few site facilities (limited roads, signs, etc.).</td>
</tr>
<tr>
<td>Social Encounters</td>
<td>Not applicable. There would be no public access in mine site. Note: Indirect effects from crowding in other nearby Recreation Opportunity Spectrum settings may occur.</td>
<td>Fully compatible/Normal. Some visitor use is expected to occur, although at low levels.</td>
</tr>
<tr>
<td>Visitor Impacts</td>
<td>Not applicable. There would be no visitors.</td>
<td>Normal. Visitor impacts are expected to be few if visitor use is low.</td>
</tr>
<tr>
<td>Visitor Management</td>
<td>Unacceptable. Visitor controls would be obvious and numerous.</td>
<td>Normal to Inconsistent, depending on controls that would be needed to ensure reclamation success.</td>
</tr>
</tbody>
</table>

* The terms “inconsistent,” “unacceptable,” “normal,” and “fully compatible” are standard terms used to describe the compatibility of uses for specific Recreation Opportunity Spectrum settings in that system. They are used here in that context.

Intermittent blasting within the pit in the project area (limited to daylight hours; generally limited to one blast per day) would result in a maximum blast noise for recreation users ranging from 30 to 40 dBA west of the Santa Rita Ecosystem Management Area to 50 to 60 dBA immediately south of the project area (see the “Noise” resource section). Although these increased noise levels associated with operations would not be readily apparent to motorized recreation users over the sound of their personal vehicles, sounds during mine operations may be audible to campers, hikers, mountain bikers, and equestrians from the fenceline surrounding the edge of the project area. In particular, campers using dispersed sites in close proximity to the project area could be impacted by increased noise levels resulting from nighttime facility operations. However, the degree of impact from noise on the designated wilderness and surrounding landscape is largely dependent on terrain shielding, open landscapes, and mining noise dispersion. Given the existing topography, proposed waste rock and tailings facilities, and perimeter buttress, terrain shielding would reduce impacts from mine operation noise to 40 dB or below in the landscape surrounding the perimeter fence.

Mine lighting would result in changes to the nighttime recreational setting on lands surrounding the project area by increasing sky glow and direct visible glare (see the “Dark Skies” resource section). These changes would contribute to displacement of recreation activities and opportunities from lands surrounding the project area.

The location of the TEP 138-kV transmission line would be the same under all action alternatives. The presence of a new transmission line and substation would contribute to diminishing the undeveloped, semiprimitive area along the utility corridor, which originates approximately 3 miles
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there would be no direct impacts to designated wilderness or roadless areas as a result of any of the action alternatives. Visitors to the Mount Wrightson Wilderness, Santa Rita Inventoried Roadless Area, and Saguaro Wilderness would have distant views of the Rosemont Copper Mine from trails and overlooks. The most affected views would be from the several trails that provide access to the Mount Wrightson summit and would afford direct, superior (from above oriented downward) and unadulterated views of the mine and associated facilities. These trails include Old Baldy Trail and Super Trail. However, a limited number of viewers make the trek to the summit of Mount Wrightson, as it is a challenging climb and is icy and dangerous in the winter months. Activities from mine operations that produce sound (as described in the “Noise” resource section) would be noticeable above a 40-dB threshold; however, the noise analysis indicates that the designated wilderness or roadless areas are located outside the 40-dB contour. The degree of impact from noise on the designated wilderness is largely dependent on terrain shielding, open landscapes, and mining noise dispersion. Although the location and size of the different elements of the project vary by alternative, because of the distance and angle of views, the impacts to the public visiting the wilderness and roadless areas would be similar for all action alternatives. Views of the Rosemont Copper Mine would contribute to a slightly more diminished sense of solitude and primitive setting for some wilderness visitors (see the “Visual Resources” resource section). However, due to the distance of designated Wilderness from active mining (at least 4 miles or more away), the degree of impact to the solitary experience would be minimal. In addition, because recreationists would no longer have access to the lands within the proposed facility security fence, it is likely that increased use would occur on other nearby lands that provide similar experiences, depending upon the recreational user type. A minor to moderate increase in user activity would be expected to occur in the Happy Valley, Louisiana Gulch, Ophir Gulch, Gardner Canyon, and Charlouleau Gap, as well as on State and County lands.

Recreation Places

The primary access road to the mine would intersect SR 83 and would be paved and open to the public up to the perimeter fence. Access to lands within the perimeter fence and beyond the guard gate would be closed to the public for safety reasons during the construction and operation phases, and the current east-west roads that connect SR 83 to the west side of the Santa Rita Ecosystem Management Area through Lopez Pass would not be accessible. Because public access would be restricted for each of the action alternative areas, the public would be displaced for a period ranging from 24.5 to 30 years. The primary access road to the mine would be open to the public up to the perimeter fence in order to access adjacent lands and roads. There would be a direct loss of acres to the Santa Rita Backcountry Touring Area and of existing NFSRs used for motorized recreation under all action alternatives. East-west access over the Santa Rita Ecosystem Management Area at Gunsight Pass and Lopez Pass would be unavailable to the public. After mining operations have ceased, public access may be reestablished over the Santa Rita Mountains through Lopez Pass. There is no public easement where either of these roads cross private land, and access could be blocked by the landowner at any time. East-west access across the Santa Rita Mountains will continue to be available on the Box Canyon Road, NFSR 62.
Mining related activities associated with each alternative would result in increased traffic (including large trucks) on SR 83 (the Patagonia-Sonoita Scenic Road), which would diminish the experience of some visitors driving on the scenic road and affect visitor safety. As many as 88 round-trip truck traffic shipments would occur per day. These shipments would include copper concentrate and cathode deliveries to either the Port of Tucson or to smelters in Mexico, as well as materials shipments to the mine that would predominantly originate from the Tucson area (see the “Transportation/Access” resource section). Copper concentrate shipments would be the largest number of routine truck shipments, with approximately 56 round trips per day, 7 days per week. This increase in heavy-truck traffic would also contribute to increased noise and intermittent traffic slowdowns 7 days per week on the scenic road, primarily between I-10 to the north and Sonoita to the south (see the “Transportation/Access” resource section). Cyclists who currently ride SR 83 and the Patagonia-Sonoita Scenic Road may not desire to continue using these roads because of the existing narrow paved roadway shoulders and the increase in large-truck traffic.

There would likely be increases in recreation and other traffic through Box Canyon due to the mine and associated traffic increases. Box Canyon Road is currently a lightly used unpaved road with sharp dropoffs. People will likely drive this route to avoid the mine and traffic on SR 83. Additional use would change the relatively quiet recreation setting in this area.

A portion of the Arizona National Scenic Trail would be relocated with all action alternatives to allow continued use of the trail. The relocation would begin after the ROD and must be completed within 1 year of approval of the ROD. Rosemont Copper would be required to provide trail access prior to restricting or closing the existing Arizona National Scenic Trail to public use. Refer to the “Mitigation Effectiveness” part of this resource section for further information. Two separate trail realignments are proposed: one for the proposed action and Phased Tailings Alternative, which would be located on the west side of SR 83 along the project perimeter fence; and one for the Barrel, Barrel Trail, and Schoefield-McCleary Alternatives, which would be located on the east side of SR 83. User experiences on the trail would differ by location, which is further described under each individual alternative below.

The location of the utility facilities, including the electrical transmission line and water supply pipeline, would be the same for each action alternative, as these facilities would be co-located in the same ROW. It would connect from the Toro switchyard, 3 miles south of Sahuarita Road and 3.5 miles east of I-19, and extend west of NFS land. Reclamation of the ROW is planned for postmine conditions on NFS land (lands outside the forest boundary are not under Coronado jurisdiction and therefore would not be subject to reclamation). ASLD would issue a ROW permit to Rosemont Copper for construction of the utility lines and associated infrastructure after the ROD is approved by the Forest Service. This ROW permit may contain reclamation stipulations, but this is unknown at this time.

In addition to the direct loss of NFSRs available for motorized recreation, the experiences of off-highway vehicle users traveling along the NFSRs that have views of the project would be modified from one characterized by an undeveloped, semiprimitive setting to one characterized by increased development and an industrialized setting (see the “Visual Resources” resource section). The implementation of any of the action alternatives would result in a reduction in the Forest Service’s ability to continue providing motorized recreation opportunities in the project area, which encompasses a portion of the Santa Rita Backcountry Touring Area.
For each action alternative, the perimeter fence would cut-off or isolate NFSRs within and outside the perimeter fence. These roads would no longer be available for public motorized access and would be decommissioned. Those roads that are covered by tailings, waste rock, stormwater facilities, or other permanent structures would be lost in perpetuity. The NFSRs within the perimeter fence but not covered or otherwise impacted by these facilities would remain decommissioned at least until final closure, when the perimeter fence would likely be removed. Whether any of these roads are reconstructed and reopened to public use would be based on the forest plan direction that is in place at that time and subject to future site-specific decisions. This area, especially NFSR 231 and the Rosemont off-highway vehicle staging area, has historically been intensively managed by the Coronado for motorized recreation. Furthermore, the Rosemont area is one of the more popular and traveled off-highway vehicle riding areas, the loss of which would be more impactful than the loss of roads in other portions of the Santa Rita Backcountry Touring Area. Certain other roads outside the perimeter fence that are cut off or isolated would also be similarly impacted. Refer to figures in the descriptions of the alternatives in chapter 2 for the location of NFSRs lost to public access for each action alternative.

Other visitors to the area engage in sightseeing when traveling to known destinations such as Madera Canyon, Mount Wrightson Wilderness, and Las Cienegas National Conservation Area and along the Patagonia-Sonoita Scenic Road (see the “Visual Resources” resource section) and sightseeing to wineries in southern Arizona (i.e., Sonoita and Elgin). The proposed action could have an adverse effect on those visitors and on users who hike to locations that afford views of the mining area.

As a result of the displaced recreation use, other recreation sites in the Santa Rita Ecosystem Management Area, including Kentucky Camp Historic Site and Elephant Head Mountain Bike Trail, are expected to receive increased visitation. Displaced motorized recreation use from the project area may result in increased motorized activity in locations less suitable for motorized recreation, such as Gardner Canyon, the Louisiana and Ophir Gulches, the Las Cienegas National Conservation Area, and the Greater ville area, as well as in increased conflicts between user groups (especially motorized and nonmotorized recreation user groups). Because of the distance and topographic screening from the project area, areas such as the Mount Hopkins complex (Smithsonian Visitor Center, Whipple Picnic Area, and telescope tours) are not expected to be impacted.

Conditions of the two annual recreation event permits issued for an archers’ and bow hunters’ club and a muzzleloaders’ club in the Fish Canyon area off of Gardner Canyon Road would likely be affected by the exclusion of hunters from hunt unit 34A due to the removal of access from the proposed project. Other commercial permit holders may be displaced from the project area, but because those permits are issued for broader areas within the Coronado National Forest, their overall operations may not be proportionately affected.

**Existing Use Levels and Trends**

Southeastern Arizona is a popular recreation destination and offers diverse opportunities for outdoor recreation activities throughout the analysis area. It is assumed that recreationists displaced from the project area would increase visitation to nearby lands, including Madera Canyon, the Mount Wrightson Wilderness, the Las Cienegas National Conservation Area, and the remaining roads and trails within the Santa Rita Backcountry Touring Area. The area that would be closed to public use ranges from 4.4 to 6.5 percent of NFS lands within the Santa Rita Ecosystem Management Area. This magnitude of change in area available to public recreational access has the potential to affect the sense of place related to the project area and, more broadly, why people choose to recreate in this area.
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The increase in mine related traffic, including heavy trucks, could discourage some users from traveling along the Patagonia-Sonoita Scenic Road under all action alternatives.

Although the public may continue to use the general area surrounding the mine for recreation purposes, the recreation experience would be diminished as a result of the impacts to scenic quality and noise generated from the mine and associated activities.

**Proposed Action Alternative**

**Recreation Opportunity Spectrum**

The proposed action would result in the direct removal of up to 6,177 acres (4.5 percent of NFS lands within the Santa Rita Ecosystem Management Area) from public entry, which represents the area that would be enclosed by perimeter fencing for public safety purposes. The primary access road to the mine would intersect with SR 83 and would be paved and open to the public up to the perimeter fence in order to access other area roads and NFS lands. Access to lands within the perimeter fence would be closed to the public for safety concerns from premining through closure and final reclamation.

A total of 5,942 acres of the project area would occur within the semiprimitive motorized setting and would be unavailable for public use during the premining, active mining, and final reclamation and closure phases. In addition, 65 acres of roaded natural and 170 acres of roaded modified areas would be unavailable for public use under the proposed action. Figure 90 shows the Recreation Opportunity Spectrum settings that would be impacted by the proposed action. The ground disturbance and installation of facilities associated with the proposed action would result in a change from the existing undeveloped, semiprimitive recreation setting on lands surrounding the proposed action to a developed, industrialized setting.

**Recreation Places**

Because access would be restricted within the project area, the public would be displaced from the project area for an estimated 24.5 to 30 years. The 6,177 acres within the perimeter fence would be unavailable for recreation use over the life of the mine. Recreationists who had previously made use of the project area would be displaced onto nearby or other lands for similar recreation opportunities; therefore, increased recreation use of surrounding areas and facilities would occur as a result of this displacement.

The project area lies within the Santa Rita Backcountry Touring Area. There is an estimated 17.5 miles of NFSRs currently available for use by motorized vehicles, including off-highway vehicles, that would be located within the perimeter fence (see figure 91); thus, public motorized access would be lost on these roads.

As presented in chapter 2, a new road would be constructed from the primary access road to NFSR 4050 to provide access to the existing NFSRs in Sycamore Canyon. The Sycamore Connector Road is proposed to be constructed to maintain legal public motorized access to the NFSRs in Sycamore Canyon, which otherwise would have no legal motorized access upon construction of the perimeter fence, from either inside or outside the forest boundary. Construction of this connector road would be required within 1 year of the date that public access to NFSR 4050 is cut off due to mine related activities. This could result in a period of up to 1 year in which legal motorized public access into the existing NFSR network (NFSR 4050 and spurs) in Sycamore Canyon would be unavailable to the public. Public motorized access may be available via NFSRs 505, 4029, and 170, which enter from the west side of the Sycamore Canyon. However, there are no public easements all the way to the
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Coronado National Forest on any of those roads; therefore, access is controlled by the owners of the private property over which the roads cross. While the public may be able to gain access during this time, public access cannot be ensured.

The proposed action would overlap and be within view of a portion of the 26-mile-long Las Colinas passage of the Arizona National Scenic Trail. The proposed action would require the relocation of a 7.3-mile-long section of the Arizona National Scenic Trail to an area between the perimeter fence and SR 83 (see figure 9 in chapter 2). Users of the rerouted Arizona National Scenic Trail would be shielded from direct exposure (e.g., noise and views) of the processing plant along part of this route, but the setting would be dominated by the mine waste rock facility and highway sights and sounds. Other areas along the trail would have views of the plant, and most areas would have open views of the waste rock and tailings facilities. In addition, noise related impacts would be evident to trail users as they pass the mine site on the trail itself as well as at a proposed new trailhead. As discussed in the “Noise” resource section, noise above 40 dBA would be audible during mine operation. Multiple nonmotorized recreational uses of the trail would continue to be supported, and this newly realigned portion would include construction of a trailhead. Relocation of the trail in this area would add miles to the total length of the trail in order to circumvent and reduce views of the waste rock and tailings facilities.

Existing Use Levels and Trends

Although southeastern Arizona is a popular recreation destination and offers diverse opportunities for outdoor recreation activities throughout the analysis area, there is little quantitative information available on recreation use levels and trends. It is assumed that the displacement of the public from the project area would result in increased visitation to nearby lands, including Madera Canyon, the Mount Wrightson Wilderness, the Las Cienegas National Conservation Area, and the remaining roads and trails within the Santa Rita Backcountry Touring Area.

Phased Tailings Alternative

Recreation Opportunity Spectrum

The Phased Tailings Alternative would result in the direct removal of 6,073 acres (4.4 percent of NFS lands within the Santa Rita Ecosystem Management Area) from public entry (104 acres less than the proposed action), which represents the area that would be enclosed by perimeter fence and would be unavailable for public use during the premining, active mining, and final reclamation and closure phases.

A total of 5,838 acres of the project area is within the semiprimitive motorized setting and would be directly disturbed. In addition, similar to the proposed action, 65 acres of roaded natural and 170 acres of roaded modified areas would be directly disturbed under the Phased Tailings Alternative. Figure 92 shows the Recreation Opportunity Spectrum settings that would be impacted by the Phased Tailings Alternative. The ground disturbance and installation of facilities associated with the Phased Tailings Alternative would also result in a change from the existing undeveloped, semiprimitive recreation setting on lands surrounding the project area to a developed, industrialized setting.

Although the McCleary Canyon drainage would remain free of mine waste material for an additional 10 years, it would be within project area of the mine during this time and unavailable for public recreation. The Phased Tailings Alternative would cause displacement of recreation activities and opportunities from lands in the project area, just like the proposed action.
Figure 92. Recreation Opportunity Spectrum with Phased Tailings Alternative
Recreation Places

Impacts to recreation places as a result of the Phased Tailings Alternative would be similar to those for the proposed action. Public access would be restricted, and the recreating public would be displaced from 6,073 acres for the life of the mine.

The impacts to motorized use would be the same as for the proposed action. As presented in chapter 2, a new road would be constructed from the primary access road to NFSR 4050 to provide access to existing NFSRs in Sycamore Canyon. The Sycamore Connector Road is proposed to be constructed to maintain legal public motorized access to NFSRs in Sycamore Canyon. Timing and impacts would be the same as for the proposed action.

Both the relocation of the Arizona National Scenic Trail, impacts from noise, and the direct and indirect impacts to trail users would be the same as those described for the proposed action.

Existing Use Levels and Trends

Changes in use levels and trends that would result from the Phased Tailings Alternative would be the same as described for the proposed action.

Barrel Alternative

Recreation Opportunity Spectrum

The Barrel Alternative would result in the direct removal of up to 6,990 acres (5.1 percent of NFS lands within the Santa Rita Ecosystem Management Area) from public entry (813 acres more than the proposed action) and would be unavailable for public use during the premining, active mining, and final reclamation and closure phases.

Up to 6,177 acres of the disturbance area would occur within the semiprimitive motorized setting. In addition, 644 acres of roaded natural (579 acres more than the proposed action) and 169 acres of roaded modified (similar to the proposed action) would be directly disturbed under the Barrel Alternative. Figure 93 shows the Recreation Opportunity Spectrum settings that would be impacted by the Barrel Alternative. The ground disturbance and installation of facilities associated with the Barrel Alternative would also result in a change from the existing undeveloped, semiprimitive recreation setting on lands surrounding the project area to a developed, industrialized setting. The Barrel Alternative would cause displacement of recreation activities and opportunities from lands within the footprint, just as for the proposed action.

Recreation Places

Impacts to recreation places as a result of the Barrel Alternative would be similar to those for the proposed action. Public access would be restricted, and the recreating public would be displaced from 6,990 acres from premining through closure and final reclamation. As presented in chapter 2, a new road would be constructed from the primary access road to NFSR 4050 to provide access to the existing NFSRs in Sycamore Canyon. The Sycamore Connector Road is proposed to be constructed to maintain legal public motorized access to NFSRs in Sycamore Canyon. Timing and impacts would be the same as for the proposed action.

There is an estimated 18.5 miles of NFSRs currently available for use by motorized vehicles, including off-road vehicles, that would be within the Barrel Alternative perimeter fence (1.0 miles more than the proposed action), and all would be lost to continued public access.
Figure 93. Recreation Opportunity Spectrum with Barrel Alternative
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The Barrel Alternative would be adjacent to and within view of a portion of the Las Colinas passage of the Arizona National Scenic Trail. The Barrel Alternative would require relocation of a 12.8-mile section of the Arizona National Scenic Trail (see figure 93) to the east side of SR 83. The rerouted portion of the trail location was selected to reduce views of mining operations and maximize the user experience along this route. Proposed trailheads would be located at the north (Hidden Springs) and south ends (Oak Tree Canyon) of the trail segment. These trailheads would provide visitor parking, accommodate horse trailers, and may also provide restroom and water facilities (at the Oak Tree Canyon trailhead).

In addition, noise related impacts would be not be evident to recreationists on the trail because of the distance of the trail from mining operations in combination with noise shielding from the waste rock and tailings facilities and other project components. As discussed in the “Noise” resource section of this chapter, noise above 40 dBA would be audible during mine operation. However, noise levels are expected to be less than 40 dBA in all locations of the rerouted Arizona National Scenic Trail except for the two crossings of SR 83 (due to traffic noise rather than mine operation noise). Noise related impacts would not be evident to recreationists on the Arizona National Scenic Trail as they pass the mine site from the trail itself as well as the trailheads because of distance of the trail from mining operations. As discussed in “Noise” resource section, noise above 40 dBA would be audible during mine operation. Noise levels are expected to be less than 40 dB in all locations on the rerouted trail for the Barrel, Barrel Trail, and Scholefield-McCleary Alternatives, except near the crossings of SR 83 (due to traffic rather than mine operation noise).

Existing Use Levels and Trends

Changes in use levels and trends that would result from the Barrel Alternative would be the same as those for the proposed action.

Barrel Trail Alternative

Recreation Opportunity Spectrum

The Barrel Trail Alternative would result in the direct removal of 6,994 acres (5.1 percent of NFS lands within the Santa Rita Ecosystem Management Area) from public entry (817 acres more than the proposed action).

Up to 6,178 acres of the project area is within the semiprimitive motorized setting and would be unavailable for public use during the premining, active mining, and final reclamation and closure phases. In addition, 647 acres of roaded natural (582 acres more than the proposed action) and 170 acres of roaded modified (same as the proposed action) would be directly disturbed under the Barrel Trail Alternative. Figure 94 shows the Recreation Opportunity Spectrum settings that would be impacted by the Barrel Trail Alternative. The ground disturbance and installation of facilities associated with the Barrel Trail Alternative would also result in a change from the existing undeveloped, semiprimitive recreation setting on lands surrounding the project area to a developed, industrialized setting. The Barrel Trail Alternative would displace recreation activities and opportunities from lands within the footprint, just as for the proposed action.

Recreation Places

Impacts to recreation places as a result of the Barrel Trail Alternative would be similar to those for the proposed action. Public access would be restricted, and the recreating public would be displaced from 6,994 acres for the life of the mine.
Figure 94. Recreation Opportunity Spectrum with Barrel Trail Alternative
There is currently an estimated 18.5 miles of NFSRs available for motorized vehicle use, including
off-highway vehicles that would be within the Barrel Trail Alternative perimeter fence (1.0 miles
more than the proposed action), all of which would be lost to public motorized access. As presented
in chapter 2, a new road would be constructed from the primary access road to NFSR 4050 to provide
access to the existing NFSRs in Sycamore Canyon. The Sycamore Connector Road is proposed to be
constructed to maintain legal public motorized access to NFSRs in Sycamore Canyon. Timing and
impacts would be the same as for the proposed action.

The Barrel Trail Alternative would result in the relocation of the Arizona National Scenic Trail (see
figure 94). Both the relocation of approximately 13 miles of the trail and the indirect impacts to trail
users would be identical to those for the Barrel Alternative. Impacts from noise would be the same as
those reported for the Barrel Alternative for trail users.

**Existing Use Levels and Trends**

Changes in use levels and trends that would result from the Barrel Trail Alternative would be the
same as those for the proposed action.

**Scholefield-McCleary Alternative**

**Recreation Opportunity Spectrum**

The Scholefield-McCleary Alternative would result in the direct removal of up to 8,889 acres (6.5
percent of NFS lands within the Santa Rita Ecosystem Management Area) from public entry (2,712
acres more than the proposed action) and would be unavailable for public use during the premining,
active mining, and final reclamation and closure phases.

A total of 8,487 acres of the project area is within the semiprimitive motorized setting. In addition,
130 acres of the semiprimitive nonmotorized setting and 268 acres of the roaded natural setting
would be directly disturbed under the Scholefield-McCleary Alternative. Figure 95 shows
the Recreation Opportunity Spectrum settings that would be impacted by this alternative.

The Scholefield-McCleary Alternative is the only alternative that would result in a direct loss of acres
of the semiprimitive nonmotorized setting.

The ground disturbance and installation of facilities associated with the Scholefield-McCleary
Alternative would also result in a change from the existing undeveloped, semiprimitive recreation
setting on lands surrounding the area to a developed, industrialized setting. Although the Scholefield-
McCleary Alternative would cause displacement of recreation activities and opportunities from lands
within the project footprint, postmine recreation opportunities in Barrel Canyon would be maintained
more than the other action alternatives.

**Recreation Places**

Impacts to recreation places as a result of the Scholefield-McCleary Alternative would be similar to
those for the proposed action. Public access would be restricted, and the recreating public would be
displaced from the 8,889 acres of the Scholefield-McCleary Alternative area for the period from
premining through closure and final reclamation.
Figure 95. Recreation Opportunity Spectrum with Scholefield-McCleary Alternative
There is an estimated 22.8 miles of NFSRs currently available for motorized vehicle use, including off-highway vehicles, that would be within the Scholefield-McCleary Alternative perimeter fence (5.3 miles more than the proposed action). All these miles would be lost to public motorized vehicle access. In addition, construction of the Sycamore Connector Road would not occur with this alternative because the larger perimeter fence would preclude a road that is accessible to the public. The Scholefield-McCleary Alternative would result in a reduction in the Forest Service’s ability to continue providing for motorized recreation opportunities in the Santa Rita Backcountry Touring Area.

The Scholefield-McCleary Alternative would result in the relocation of approximately 13 miles of the Arizona National Scenic Trail. Both the relocation of the trail and the indirect impacts to trail users would be similar to those for the Barrel and the Barrel Trail Alternatives, though mine features (pit, waste rock and tailings piles, plant site, roads, etc.) would be more visible due to the more sprawling footprint of this alternative and because the waste rock facilities do not provide screening. Impacts from noise would be the same as those reported for the Barrel Alternative.

Existing Use Levels and Trends
Changes in use levels and trends that would result from the Scholefield-McCleary Alternative would be the same as those for the proposed action.

Comparison of Impacts
The Scholefield-McCleary Alternative would have the greatest impact to recreation because it would result in the greatest amount of acreage removed from public access and no longer available for recreational use and because of its extensive visual impacts. The proposed action, Phased Tailings Alternative, and Barrel Alternative would result in similar impacts, and all would have somewhat fewer impacts than the Scholefield-McCleary Alternative.

Cumulative Effects
This cumulative effects discussion addresses the cumulative impacts from the action alternatives when added to past, present, and any applicable reasonably foreseeable actions. Foreseeable actions are identified on the Coronado ID team’s list of reasonably foreseeable future actions, provided in the introduction to chapter 3. The following reasonably foreseeable actions from that list were determined to contribute to a cumulative impact to recreation:

- The fuels reduction projects proposed by the Forest Service and other agencies, including the Catalina-Rincon FireScape Project, the Chiricahua FireScape Project, could displace recreational use. These projects would implement actions designed to reduce fuels. The Catalina-Rincon FireScape Project proposes hand thinning, mechanical treatments, fuelwood harvesting, application of prescribed fire, and selective use of herbicides. Annual treatment of approximately 50,000 acres is proposed. The Chiricahua FireScape Project proposes thinning, piling by hand or machine, chipping, lopping and scattering, pruning, mastication, grubbing, fuelwood harvest, and use of prescribed fire on approximately 500,000 acres. This project could temporarily displace recreational use from the area of proposed activities, which would add to the displacement and impacts to recreation from the Rosemont Copper Project. However, impacts would likely be limited to the short time in which activities are occurring.
The former Oracle Ridge Mine, located on private property within the Santa Catalina Ranger District, is an inactive, small-scale underground copper mine in the permitting and detail design stage for resuming operations. The proposed mine operation would use the same surface footprint as previous operations to the extent possible. Additionally, the Forest Service proposes to issue a special use permit to Oracle Ridge Mining, LLC, authorizing the use of NFSRs, a parking area, and a utility corridor during operation of the existing Oracle Ridge Mine, which is located on private land. Activities on NFS lands could include construction of a gravel emergency-use helipad where a dirt parking lot now exists; use and maintenance of about 3 miles of NFS roads; reconstruction and use of less than 1 mile of slurry pipeline within a 50-foot utility corridor; relocation of the mine entrance gate; and fence and sign the mine boundary with NFS land in accordance with Forest Service architectural guidelines. This project could result in displacement of recreational use on NFS lands in the vicinity of the mine that would be in addition to the impacts to recreational use predicted for the Rosemont Copper Project.

The Forest Service proposes to add, decommission, close, and change designation of roads in the NFSR database and prohibit off-road motorized travel for dispersed camping in certain areas. Implementation could result in changes to the established system of roads and trails in the Santa Rita Ecosystem Management Area on the Nogales Ranger District. Proposed changes include closing unauthorized roads and existing system roads, prohibiting motor vehicle use, and adding new roads to the current system. The net result of the proposed action would be a decrease in motorized use of an estimated 27 miles of NFSRs that are currently open to public motorized use. Road closures and vehicle prohibitions would contribute to a decrease in access for motorized recreation opportunities in the analysis area in the long term. The designation of unauthorized roads that are currently used for hunter access, hiking, and dispersed camping as part of the system would enhance recreation opportunities by ensuring maintenance and management of those roads as part of the Forest Service system of motorized travel. Combined with the decrease in motorized access associated with the proposed Rosemont Copper Project, the overall impact would be a continued decrease in access for motorized recreational opportunities.

The Nogales Ranger District proposes to remove hazardous fuels on 2,500 acres in Hog and Gardner Canyons on the Nogales Ranger District. This proposal would mechanically thin standing and dead juniper and oak trees that are less than 20 inches in diameter in the area of the 2005 Florida Fire, about 10 miles northwest of the town of Sonoita. Treatment areas would be accessed by truck using NFSRs. In some locations, off-road travel may be necessary. No temporary or permanent roads would be constructed. Fuelwood would be removed from the area in trucks or off-highway vehicles and offered to the public. The remaining slash would be lopped using hand tools and scattered at the site. The project is projected to take 2 to 4 months to complete. This project could temporarily displace recreational use from the area of proposed activities, which would add to the displacement and impacts to recreation from the Rosemont Copper Project. However, impacts would likely be limited to the short time in which activities are occurring.

Cumulatively, these foreseeable actions would contribute and add to the direct and indirect recreation impacts described earlier. Actions associated with the Oracle Ridge Mine would contribute to displacement of recreational uses from this area of the Coronado National Forest. Changes to NFSR designation in the Santa Rita Management area on the Nogales Ranger District could continue to decrease access for motorized recreation opportunities. Hazardous fuels treatment in Hog and Gardner Canyons would likely displace recreational use for the immediate area for a short amount of
time. The overall result is fewer areas of the forest available for recreation, thus displacing use to
other public lands.

**Climate Change**

Climate change may result in less winter rain, which could impact the ability of vegetation to become
established and grow. In addition, climate change may contribute to the mortality of large oak and
deciduous trees in the area, including those located within drainages, which would negatively affect
scenic quality.

Climate change would impact recreation and visual quality if lower precipitation, warmer
temperatures, and more frequent drought cycles result in less successful or slower revegetation and
more bare soil and rock being visible on the waste rock and tailings facilities, postmine plant site, and
other areas allotted for revegetation. Should these conditions occur, they would increase impacts to
both recreation settings and visual quality because revegetation is critical to reducing mine impacts.
Also, a higher frequency of heavy rains and flooding could damage slopes and revegetated areas,
which would increase impacts further.

**Mitigation Effectiveness**

The following measures were determined to mitigate impacts to recreation.

**Mitigation and Monitoring – Forest Service**

- **Revegetate disturbed areas with native species.** This includes monitoring and control of
  noxious and invasive weed species. This mitigation could help to reestablish conditions
  conducive to future recreation use within the project area and minimally reduce visual
  impacts to visual resources over the long term.

- **Restrictive easement Davidson Canyon Watershed Parcels would be recorded on 383
  acres total in Davidson Canyon that precludes real estate development, and similar land
  use activities and grazing restrictions would be developed that would protect
  conservation values.** Low impact public use (hiking, bird watching, minor forms of hunting,
  etc.) would be allowed (including uses along the Arizona National Scenic Trail). Recording
  of a restrictive covenant that specifies these uses would provide some public access and use
  of these lands and would help to offset loss of access and recreational opportunities on NFS
  lands to some degree.

- **Implementation of an outdoor lighting plan that would reduce potential impacts from
  artificial night lighting.** This mitigation involved following Rosemont Copper’s outdoor
  lighting mitigation plan (Monrad et al. 2012). This plan, which applies to all action
  alternatives except the proposed action, would greatly reduce sky glow and noticeable
  lighting, as opposed to the original lighting plan, which applies to the proposed action. While
  the lighting mitigation plan would reduce potential impacts, the mine area would still be an
  industrial mining site that operates 24 hours a day, 7 days a week. Impacts may be less than
  they would otherwise be, but recreational users desiring solitude and a natural setting would
  be displaced from the area immediately surrounding the project area.

- **The removal of mining facilities that would not be needed for future management of the
  land is an additional mitigation measure.** These facilities include buildings, the plant site,
  some roads, the perimeter and security fence (if not incorporated into allotment management
  plans), power supply line, and piping systems, (consistent with Forest Service requirements,
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as well as requirements specified in Certificate of Environmental Compatibility and ASLD ROW permit); and water supply pipeline. The plant site would be recontoured and revegetated with native vegetation. Building foundations would either be removed or broken up and buried. Some roads may remain to provide public access. This would be a step toward reestablishing a more natural setting and providing public access into the project area, which could allow for recreational opportunities postmine.

- **Relocation of a segment of the Arizona National Scenic Trail and construction of trailheads; and recording of an easement to allow the Arizona National Scenic Trail to be constructed across Rosemont Copper’s private land.** Rosemont Copper would fund relocation of a section of the Las Colinas portion of the Arizona National Scenic Trail away from Rosemont Copper Mine facilities, along with construction of trailheads. Locations differ by alternative and offer uniquely different mitigating opportunities. The location between the perimeter fence and SR 83 that applies to the proposed action and Phased Tailings Alternative would allow continued use of the trail; however, user experiences would be dominated by the sights and sounds of an industrial mining operation and the trail would have to be highly engineered with many man-made structures, such as steps, further detracting from national scenic trail character. The location on the east side of SR 83 that applies to the Barrel, Barrel Trail, and Scholefield-McCleary Alternatives was specifically selected to provide trail users with an experience that would be dominated by natural views and would be further removed from the sights and sounds of the mine, thus better meeting user expectations for the Arizona National Scenic Trail. However, it would be longer and would require two crossings of SR 83. The relocation of the Arizona National Scenic Trail would require locating the trail across two private parcels of land owned by Rosemont Copper. A trail easement would be required before trail relocation construction could commence. These are the same land parcels described in Davidson Canyon Parcels above, which would compensate for impacts to WUS. Coordination between future land uses allowed under the restrictive covenant developed for FS-WUS-01 and those appropriate for the Arizona National Scenic Trail corridor would occur.

- **Mitigation of the loss of off-highway vehicle use opportunities.** Rosemont Copper would provide funding for efforts to produce a plan for developing facilities and managing OHV use that would be displaced from the project area. Rosemont would enter into a collection agreement to provide funding that would include $100,000 to be used for a NEPA analysis and decision process to determine where additional facilities are warranted and appropriate. Subsequent to the NEPA decision to implement OHV mitigation, Rosemont would contribute $700,000 to the Coronado for additional work, which could include, but not limited to construction of OHV facilities; public outreach and education; management and enforcement. While this would not immediately reduce or compensate for loss of OHV opportunities in the project area, once implemented, this has the potential to compensate for the loss of OHV opportunities in the project area by creating or improving similar facilities and opportunities in other areas of the Coronado.

- **Management techniques to reduce potential noise impacts from blasting and from vehicles are another mitigation measure.** Noise management techniques would include generally limiting blasting to once per day, during daylight hours; sequenced blasting using time-delay technology; explosive use limited to 52 tons per day; and use of backup alarms on vehicles attuned to reduce noise. Similar to the outdoor lighting mitigation, these mitigation measures would reduce noise that is heard to recreational users at distances from the project area. However, it is expected that noises associated with industrial mining would be
noticeable in the immediate vicinity of the project area, which would create undesirable conditions for those seeking solitude and a natural outdoor setting.

In addition to these mitigation measures, the mitigation measures designed to reduce visual impacts described in the “Visual Resources” resource section of this chapter would also contribute to mitigating recreational impacts. Scenic quality is a key component of recreational setting and experience, and mitigation measures that would reduce impacts to visual resources would benefit recreation and wilderness as well.

**Mitigation and Monitoring – Other Regulatory and Permitting Agencies**

This category of mitigations includes numerous measures designed to mitigate and monitor impacts to air quality, including emission of fugitive dust and other pollutants. These measures would reduce impacts to recreation by ensuring that the public is not exposed to air quality that exceeds national standards (proposed action, Phased Tailings, and Barrel Alternatives only). In addition, dust control measures would reduce potential impacts to visibility. Please refer to appendix B and the “Air Quality and Climate Change” resource section in this chapter for further information.

**Mitigation and Monitoring – Rosemont Copper**

- **Eliminating future development of private lands that would ultimately be located on top of waste rock and tailings facilities.** Should Rosemont Copper record a restrictive covenant, this could eliminate future development of private lands currently owned by Rosemont Copper within the footprint of the waste rock and tailings facilities, which would reduce potential impacts to recreation settings.

- **Providing public access to Rosemont Copper private lands not affected by mine operations through the Arizona Game and Fish Cooperative Landowner incentive program.** Should Rosemont Copper work with AGFD to include their lands in this program, it could help compensate for lost to recreational opportunities such as hunting from the mine.

- **Establishing the Santa Rita Mountains Community Endowment Trust, for the purposes of funding priority community projects.** Rosemont Copper intends to establish this endowment trust, which would fund priority community projects that include community recreation, cultural, and environmental conservation. The Trust would be established as an independent charitable trust, with a Board of Trustees and Advisory Council. The projects that the Trust would fund would be decided at a later date, upon the board’s specific decisions. While this could fund recreation-oriented projects that could compensate for impacts from the mine, the Trust has yet to be established and funded. Therefore, it is not possible to determine what projects may result and how they might mitigate impacts to recreation and wilderness.

**Conclusion of Mitigation Effectiveness**

Overall, the mandatory mitigation measures would partially mitigate the loss of recreation opportunities, trails and trailheads, and public access. Active revegetation and noxious weed control efforts would reestablish native plant communities postclosure that would help create conditions that are more conducive to recreational pursuits. Removing the perimeter and security fences would help reestablish public access to the project area postmine and make it once again be available for public recreation. Relocation of the Arizona National Scenic Trail would allow continued trail use through the project area; however, user experiences would vary dramatically, depending on the location...
selected for implementation. Restrictive covenants on two private land parcels in Davidson Canyon
would maintain use along the Arizona National Scenic Trail during active mining and postmine.
Outdoor lighting and noise mitigation would reduce potential impacts to recreational users at
distances away from immediate project area. Impacts to recreational users and visitors to nearby
wilderness areas would be lower than without these mitigation measures. However, the project area
would remain a large-scale industrial mining operation, and the views and user experiences would be
dominated by such in the immediate vicinity, or within sight of the project area.