

Chapter 3. Affected Environment and Environmental Consequences

1 Introduction

2 This chapter describes the natural and human environment that may be affected by the proposed
3 action and its alternatives. It also discloses the direct, indirect, and cumulative impacts of the
4 proposed action and alternatives. The analysis disclosed for each resource section in this chapter
5 considers the effects of the proposed project as well as the effects on the proposed amendment to the
6 “Coronado National Forest Land and Resource Management Plan” (forest plan) (U.S. Forest Service
7 1986) (see the “Forest Plan Consistency” section in chapter 2). Environmental resources were
8 grouped into three categories—Physical Environment, Biological Resources, and Social
9 Environment—for effects analysis. Further, the text for each resource area within a category was
10 divided into three subsections: “Introduction,” “Affected Environment,” and “Environmental
11 Consequences.”

12 Each “Introduction” section informs the reader of changes that have been made since the draft
13 environmental impact statement (DEIS) was released for public review in September 2011. It also
14 defines both the temporal bounds and the spatial area of analysis specific to each resource and
15 reiterates issues and cause/effect relationships of concern that were expressed during the public
16 scoping process (see the “Issues” section in chapter 1) and public review of the DEIS. Resources not
17 directly linked to a specific issue or cause/effect relationship (e.g., “Geology, Minerals, and
18 Paleontology”) must still be evaluated as part of the National Environmental Policy Act (NEPA)
19 review to accomplish full public disclosure of potential impacts. Bounds and issues help focus the
20 effects analysis on an area of potential effects and influence the methods used to quantify impacts,
21 including unit(s) of measure (e.g., acres, miles, cubic tons). Finally, each “Introduction” section
22 describes the methodology, assumptions, unknown and/or uncertain information, and data used in the
23 analysis.

24 Each “Affected Environment” section begins by identifying laws, regulations, and policies that
25 regulate and/or guide management of the resource. The existing conditions for the resource are then
26 described qualitatively and/or quantitatively, depending on the analysis factors and measures
27 identified in issue statements at the end of chapter 1 and on information available to the Coronado
28 National Forest (the Coronado) interdisciplinary team (ID team). Descriptions of existing conditions
29 are sometimes grouped into subcategories for clarity.

30 Past and present actions that may have contributed to or are currently affecting existing conditions are
31 briefly identified in each “Affected Environment” section. For example, historic (past) mining
32 activities in the area of potential effects for the Rosemont Copper Project are described in the
33 “Geology, Minerals, and Paleontology” resource section, as well as in other resource sections where
34 past mining activities have had legacy effects on the existing condition of a resource (e.g., “Water”).
35 Present actions that contribute effects on the existing condition of a resource are also discussed as the
36 basis for characterizing potential effects of activities proposed by the action alternatives. For
37 example, current traffic statistics for State Route (SR) 83 characterize the existing conditions, which
38 then provide a baseline against which specialists can assess the type and scale of potential effects
39 from mine related traffic on SR 83.

40 The “Environmental Consequences” section discloses the direct, indirect, and cumulative effects of
41 each proposed alternative on each resource, beginning with the no action alternative. As discussed in
42 chapter 2, no action for the Rosemont Copper Project means that the mine plan of operations (MPO)

1 would not be approved and that Rosemont Copper Company (Rosemont Copper) would not be
2 authorized to use National Forest System (NFS) lands for any portion of the proposed project.

3 The impacts of implementing the action alternatives are addressed next, beginning with a discussion
4 of effects that are common to all action alternatives and followed by disclosure of effects expected
5 from individual alternatives.

6 Please note that the term “Santa Rita Ecosystem Management Area” is used in a number of resource
7 sections in this chapter to refer to the geographical area composed of NFS lands and private
8 inholdings that encompasses the Santa Rita Mountains.

9 Council on Environmental Quality (CEQ) regulations define a cumulative impact as one that
10 “results from the incremental impact of the action when added to other past, present, and reasonably
11 foreseeable actions regardless of what agency (federal or nonfederal) or person undertakes such other
12 actions. Cumulative impacts can result from individually minor but collectively significant actions
13 taking place over a period of time” (40 Code of Federal Regulations (CFR) 1508.7).

14 As stated above, past and present actions that contribute to the existing condition of the affected
15 environment in the project area are discussed under the “Affected Environment” heading. To estimate
16 the potential for and significance of cumulative impacts, the effects of each alternative must be
17 considered in conjunction with those of “reasonably foreseeable” actions that have the same temporal
18 and spatial bounds as the alternatives. Reasonably foreseeable actions are those that are likely to
19 occur in the future and do not include those that are speculative. In order to determine which future
20 activities are likely to occur, the Coronado ID team convened to create a list of reasonably
21 foreseeable actions with input from all resource specialists.

22 Specific projects listed by the ID team as reasonably foreseeable actions must be sufficiently defined
23 with respect to the nature of the actions and their location relative to the proposed action and
24 alternatives to facilitate consideration of their potential impacts. Information such as this may
25 originate in an application for a permit, formal consideration of authorization of an activity by a
26 Federal, State, or local agency, or approval of action by a legislative body (e.g., City Council, County
27 Commission, or Congress). Projects that are not developed to this extent are considered speculative
28 and are not “reasonably foreseeable.” Therefore, it is not appropriate to include them in a cumulative
29 effects analysis. Certain actions within the spatial and temporal bounds of the Rosemont Copper
30 Project that were considered to be speculative include the future mining by Rosemont Copper of
31 other mineral deposits in the area, specifically the Peach-Elgin, Copper World, and Broadtop
32 deposits. Currently, no proposals for development of these projects have been submitted to the
33 Coronado or other land management agency.

34 Those actions determined by the ID team to be reasonably foreseeable and sufficiently defined for
35 analysis of their contribution to cumulative effects, when considered with the effects of the Rosemont
36 Copper Project, are as follows:

- 37 • The U.S. Forest Service (Forest Service) is proposing landscape-level fire management and
38 fuels reduction projects in two areas of the Coronado National Forest. Both projects would
39 include an amendment to the forest plan, to establish less restrictive visual quality objectives
40 in the project area.
- 41 o The Catalina-Rincon FireScope Project, proposed on the Santa Catalina Ranger District
42 and adjacent lands in Pima, Pinal, and Cochise Counties, Arizona. Proposed activities

- 1 include vegetation hand thinning, mechanical treatments, fuelwood harvesting,
 2 application of prescribed fire, and selective use of herbicides. Annual treatment of
 3 approximately 50,000 acres is proposed.
- 4 o The Chiricahua FireScope Project is proposed for the Chiricahua, Dragoon, and Dos
 5 Cabezas Mountains. The Forest Service, National Park Service, Bureau of Land
 6 Management (BLM), and U.S. Fish and Wildlife Service (USFWS) propose to implement
 7 fuels reduction activities on approximately 500,000 acres in southeastern Arizona.
 8 Activities could include thinning, piling by hand or machine, chipping, lopping and
 9 scattering, pruning, mastication, grubbing, fuelwood harvest, and use of prescribed fire.
 - 10 • The Nogales Ranger District proposes to remove hazardous fuels on 2,500 acres in Hog and
 11 Gardner Canyons on the Nogales Ranger District.
 - 12 • The Forest Service proposes to approve two MPOs for the Moore and Moore No. 4 Placer
 13 Mine and the Dice No. 8 Placer Mine, both located 2 miles southwest of
 14 Washington/Duquesne, Arizona. Actions for each project would include trenching and
 15 washing of excavated material in a 1- to 2-acre area for a maximum of 1 year.
 - 16 • The Forest Service proposes to approve an MPO for Javelina Minerals Exploration for
 17 mineral exploration drilling of eight holes in an area located approximately 3 miles
 18 southeast of Patagonia, Arizona. Activities would occur for a maximum of 1 year.
 - 19 • The Forest Service proposes to approve an MPO to OZ Exploration Proprietary Ltd. for
 20 mineral exploration drilling in the East Paymaster and Guajolote Flats areas in the Patagonia
 21 Mountains. Activities would occur for a maximum of 1 year.
 - 22 • The BLM proposes to approve an MPO to expand the Andrada Mine limestone quarry in the
 23 Davidson Canyon drainage system north and northeast of the Santa Rita Mountains.
 24 The Andrada Mine is located approximately 4 miles from the Tucson, Arizona, city limits
 25 and 1 mile from the Vail, Arizona, city limits.
 - 26 • The Forest Service proposes to approve an MPO for minerals exploration drilling on the
 27 Helix Margarita property for a maximum of 1 year. This property is located near Arivaca in
 28 Santa Cruz County, Arizona, about 75 miles south of Tucson, Arizona.
 - 29 • The Forest Service proposes to approve an MPO for Arizona Minerals Inc. for proposed
 30 minerals exploration (referred to as Hermosa minerals exploration) on the Sierra Vista
 31 Ranger District, approximately 6 miles southeast of Patagonia, Arizona. The proposal
 32 involves drilling for core samples and water monitoring wells. Drilling would occur for a
 33 maximum of 2 years, with monitoring to continue for up to 10 years.
 - 34 • The Forest Service proposes to approve an MPO for Regal Resources for minerals
 35 exploration drilling of five holes to obtain evidence of mineralization over a 2-acre area for
 36 a maximum of 1 year. The Patagonia/Sunnyside minerals exploration project is located near
 37 Nogales, Arizona, about 45 miles south of Tucson, Arizona.
 - 38 • In late 2009, Freeport-McMoRan bought 8,900 acres of the long-closed Twin Buttes Mine
 39 site, near Sahuarita. Required permits for reopening the mine have not been issued to date,
 40 but it is reasonable to assume that this mine could be reopened at some point in the future.
 - 41 • The former Oracle Ridge Mine, located on private property within the Santa Catalina
 42 Ranger District, is an inactive, small-scale underground copper mine in the permitting and
 43 detail design stage for resuming operations. The proposed mine operation would use the
 44 same surface footprint as previous operations to the extent possible.

- 1 • The Forest Service proposes to issue a special use permit to Oracle Ridge Mining, LLC,
2 authorizing the use of forest roads, a parking area, and a utility corridor during operation of
3 the existing Oracle Ridge Mine, which is located on private land on the Santa Catalina
4 Ranger District.
- 5 • In May 2010, a lease was granted to Charles Seel for mining purposes for 240 acres of
6 Arizona State Trust Land Department (ASLD) State Trust land (from State land
7 commissioner) in Section 29, Township 17 South, Range 17 East, adjacent to CalPortland
8 leases in Davidson Canyon. There are no known plans to explore for or develop mineral
9 resources on this lease in the foreseeable future.
- 10 • The BLM proposes to approve a decision for programmatic aquatic special status species
11 reintroductions at Las Cienegas National Conservation Area. The purpose of this project is
12 to conserve imperiled aquatic species through the establishment of new populations in
13 strategically located livestock and wildlife watering ponds. The project would include:
14 species translocations for federally listed Chiricahua leopard frog, desert pupfish, Gila
15 topminnow, and Gila chub; release of Mexican gartersnakes into stock ponds and modified
16 storage tanks; release of Sonora mud turtles into stock ponds from sources in the Cienega
17 and O'Donnell Creek basins; planting of Huachuca water umbel at suitable pond locations;
18 and protection of native leopard frog, fish, and reptile populations from invasive species.
19 Activities would occur over a 10-year period.
- 20 • The BLM and Arizona Game and Fish Department (AGFD) are proposing reintroduction of
21 beaver into Cienega Creek at Las Cienegas National Conservation Area. The timing of this
22 potential action has not yet been determined.
- 23 • The Community Water Company of Green Valley is proposing delivery and recharge of
24 groundwater with water from the Central Arizona Project in the Green Valley area.
- 25 • The Farmers Investment Company is proposing the extension of Central Arizona Project
26 water into actively farmed pecan groves and activation of a groundwater savings facility
27 near Sahuarita.
- 28 • Pima County may propose specific actions related to its "Sonoran Desert Conservation
29 Plan," including acquisition of archaeological and historical sites and traditional use sites for
30 conservation and heritage education purposes, tours, monitoring, and other uses of sites by
31 Pima County staff and others. Specific sites or actions are not currently known.
- 32 • The Forest Service proposes to add, decommission, close, and change designation of roads
33 in the NFS road (NFSR) database and prohibit off-road motorized travel for dispersed
34 camping in certain areas on the Nogales Ranger District.
- 35 • The Forest Service is proposing to reauthorize the grazing permit for the Gardner allotment,
36 located 5 miles north of Sonoita.
- 37 • Development of the Farmers Investment Company property within the Town of Sahuarita's
38 jurisdiction over the next 40 to 50+ years for residential and commercial mixed use is
39 proposed, along with the enhancement of more than 12 miles of the Santa Cruz River in
40 both the town of Sahuarita and Pima County.
- 41 • Rancho Sahuarita is a proposed 3,048-acre planned community located within the Town of
42 Sahuarita's jurisdiction adjacent to the northwestern portions of the Sahuarita Farms
43 property. The plan allows for 11,680 residential dwelling units, or 3.8 residents per acre.
44 The plan also includes about 1,000 acres of mixed-use and/or other non-residential land
45 uses.

- 1 • Quail Creek is a proposed 1,700-acre master-planned retirement community located
2 northeast of Sahuarita Farms' southernmost specific plan parcel. The community is within
3 the Town of Sahuarita's jurisdiction and is entitled for approximately 5,000 housing units
4 and a limited amount of nonresidential uses adjacent to Old Nogales Highway.
- 5 • Madera Highlands is proposed 920-acre community located within the Town of Sahuarita's
6 jurisdiction. The plan allows for approximately 3,500 units, or approximately 3.8 residents
7 per acre. It is located adjacent to the eastern boundary of Sahuarita Farms' southernmost
8 development parcel.
- 9 • Tucson Electric Power Company (TEP) proposes two expansions of 138-kilovolt (kV)
10 power transmission lines that may be within one or more Rosemont Copper Project analysis
11 areas. The first would involve the Vail substation–Cienega substation–Spanish Trail
12 substation. It would use the existing Vail–Fort Huachuca/Vail–Spanish Trail 138-kV
13 corridor between Vail substation and seven spans east of Wentworth Road and then would
14 involve construction of a new double-circuit 138-kV line northeast for approximately
15 2 miles to TEP's proposed Cienega site. The second expansion project would involve the
16 South substation–Hartt substation–Green Valley substation. It would tap into the existing
17 South–Green Valley 138-kV circuit and drop into a new station adjacent to the right-of-way
18 (ROW) located approximately 1 mile south of Old Nogales Highway and Duval Mine Road.
- 19 • Demand for groundwater in the Sahuarita area is expected to increase by 200 percent by the
20 year 2030.