# APPENDIX B. EXISTING CONDITIONS OF OFFERED LANDS

# Existing Conditions of Offered Lands

## *Overview of Land Exchange*

Section 3003 of the Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015 (NDAA) directs the conveyance of approximately 2,422 acres of specified National Forest System (NFS) lands to Resolution Copper Mining, LLC (Resolution Copper) if Resolution Copper offers to convey approximately 5,374 acres of private lands to the United States, which Resolution Copper has done. Table B-1 provides a brief summary of the land exchange parcels. A detailed description of the land exchange can be found in section 2.2.1.1 of the draft environmental impact statement (DEIS). The complete Section 3003 of the NDAA is provided in appendix A of the DEIS.

**Table B-1. Summary of land exchange parcels**

| Parcel Landownership | Description of Parcels to Be Exchanged |
|---|---|
| Parcels transferred from the United States to Resolution Copper | • 2,422 acres near Superior in Pinal County, Arizona, known as the **Oak Flat Federal Parcel**, to become private lands |
| Parcels transferred from Resolution Copper to the United States, to be included in the NFS | • 140 acres* near Superior in Pinal County, Arizona, known as the **Apache Leap South End Parcel**, to be administered by the Tonto National Forest<br>• 148 acres in Yavapai County, Arizona, known as the **Tangle Creek Parcel**, to be administered by the Tonto National Forest<br>• 147 acres in Gila County, Arizona, known as the **Turkey Creek Parcel**, to be administered by the Tonto National Forest<br>• 149 acres near Cave Creek in Maricopa County, Arizona, known as the **Cave Creek Parcel**, to be administered by the Tonto National Forest<br>• 640 acres north of Payson in Coconino County, Arizona, known as the **East Clear Creek Parcel**, to be administered by the Coconino National Forest |
| Parcels transferred from Resolution Copper to the U.S. Department of the Interior | • 3,050 acres near Mammoth in Pinal County, Arizona, known as the **Lower San Pedro River Parcel**, to be administered by the U.S. Department of the Interior Bureau of Land Management (BLM) as part of the San Pedro Riparian National Conservation Area<br>• 940 acres south of Elgin in Santa Cruz County, Arizona, known as the **Appleton Ranch Parcel**, to be administered by the BLM as part of the Las Cienegas National Conservation Area<br>• 160 acres near Kearny in Gila and Pinal Counties, Arizona, known as the **Dripping Springs Parcel**, to be administered by the BLM |
| If requested by the Town of Superior, Arizona, land would be transferred from the United States to the Town of Superior | • 30 acres associated with the Fairview Cemetery<br>• 250 acres associated with parcels contiguous to the Superior Airport<br>• 265 acres of Federal reversionary interest associated with the Superior Airport |

* Using updated survey information provided by Resolution Copper, the U.S. Forest Service revised the Apache Leap South End Parcel from 110 acres (as presented in the NDAA) to 140 acres. Acreage of all other parcels is subject to revision upon completion of all survey work by the BLM.

## *Offered Lands – Forest Service*

The offered lands include 5,374 acres of Resolution Copper private land on eight parcels located throughout Arizona. The parcels of offered lands would be transferred to the United States, for administration by either the U.S. Department of Agriculture Forest Service (Forest Service) or the U.S. Department of the Interior Bureau of Land Management (BLM).

Details of the private parcels that would be transferred to the United States with management by the Forest Service are in the following text. Additional details regarding the special status species present on

the offered lands being transferred to the Tonto National Forest, Coconino National Forest, and BLM are summarized in tables B-2, B-3, and B-4, respectively, at the end of this appendix.

## APACHE LEAP SOUTH END PARCELS

As noted later in this section, the Apache Leap South End Parcels would become part of the Apache Leap Special Management Area (SMA), administered by the Tonto National Forest, Globe Ranger District. The NDAA required completion of a management plan for the Apache Leap SMA. Preparation of the management plan was conducted through a separate National Environmental Policy Act (NEPA) process, which resulted in an environmental assessment (August 2017) and the final management plan (December 2017). Substantial information about the Apache Leap South End Parcels can be found in that environmental assessment (see "Key Documents Describing Apache Leap South End Parcels" later in this section). The Apache Leap management plan would exclude future grazing leases and limit construction and motorized vehicles to protect the natural character of the area.

### Parcel Description

The Apache Leap South End Parcels consist of three parcels that total 140 acres, located near the eastern edge of the town of Superior in Pinal County, Arizona (figures B-1 and B-2). The Apache Leap South End Parcels are surrounded by NFS lands and would become part of the Apache Leap SMA, administered by the Tonto National Forest, Globe Ranger District. Upon completion of the land exchange, Resolution Copper would surrender all mining claims and interests to the parcels. Portions of the parcels are accessible by unimproved roads and trails from below Apache Leap via Ray Road/Apache Leap Road from Arizona State Route 177, or from above Apache Leap via NFS Road 315 via Magma Mine Road.

Figure B-1. Photograph of Apache Leap South parcels

The parcels include lands located above and below Apache Leap, an escarpment of sheer cliff faces, hoodoos, and buttresses that forms the scenic backdrop to the town of Superior. Current land uses on the parcels include livestock grazing and informal recreation such as hiking, rock climbing, nature viewing, and hunting. Additionally, there are multiple historical mining features and remnants of old mining-related roads located throughout the parcels, including small open cuts, shafts, tunnels, raises, crosscuts, and more extensive underground workings. The major underground mines in this area were principally known as the Grand Pacific and Belmont mines. Entrances to these mines are found on portions of the parcels and appear to date to the early 1900s, with evidence of having been explored historically for the presence of economic minerals. In a few instances, this exploration led to mineral development and exploitation.

## Geological Setting

This area lies in a transitional zone on the northeastern edge of the Basin and Range physiographic province. The western edge of this area is generally very steep, with the cliffs of the Apache Leap escarpment rising abruptly above the town of Superior. There is roughly up to 1,970 feet of vertical displacement along the escarpment and Superior is in a down-dropped fault basin. The Tertiary-aged Apache Leap Tuff, the youngest consolidated formation in the area, forms the Apache Leap escarpment, and the underlying Paleozoic sedimentary rocks and Precambrian sedimentary rocks are exposed at the foot of the escarpment. Tertiary-aged Whitetail Conglomerate is present, with limited exposure at the toe of the slope on the western side of Apache Leap. A Quaternary alluvial deposit overlies the Apache Leap Tuff in a small area in the southwestern portion of the parcels.

## Biological and Water Resources

Major biotic communities within the Apache Leap South Parcels include the Arizona Upland subdivision – Sonoran Desertscrub vegetation community in lower elevations and Interior Chaparral along the top of the Apache Leap escarpment (Brown 1994). Interior Chaparral species also occur on north-facing slopes in lower elevations west of the Apache Leap escarpment.

Vegetation found in the Arizona Upland subdivision typically consists of shrubs, cacti, and leguminous trees such as foothill paloverde, saguaro, and velvet mesquite. Additional species common to this area include goldenflower century plant, Mormon tea, fairyduster, barrel cactus, catclaw mimosa, jojoba, catclaw acacia, wolfberry, brittlebush, teddybear cholla, buckhorn cholla, cactus apple, Engelmann's hedgehog, shrubby buckwheat, flattop buckwheat, Louisiana sagewort, desert marigold, Coues' cassia, desert globemallow, and purple three-awn.

The Interior Chaparral vegetation type is characterized by dense stands of woody evergreens and shrubs. A common (diagnostic) species of Interior Chaparral in central Arizona is scrub live oak. In the Apache Leap SMA, this community is best represented by scrub live oak, pointleaf manzanita, red barberry, alderleaf mountain mahogany, deerbrush, and sugar sumac. Other common species include crucifixion thorn, hopbush, Wright's silktassel, and broom snakeweed.

Three special status plant species have the potential to occur within the parcels: Arizona hedgehog cactus, Pima Indian mallow, and mapleleaf false snapdragon. All may occur but are not known to occur. There is suitable habitat for Arizona hedgehog cactus in the northern portion of the parcels, and the parcels are near known populations of the species. However, the species' presence was not confirmed during site visits or during informal surveys specifically searching for the species by Forest Service biologists over the past several years.

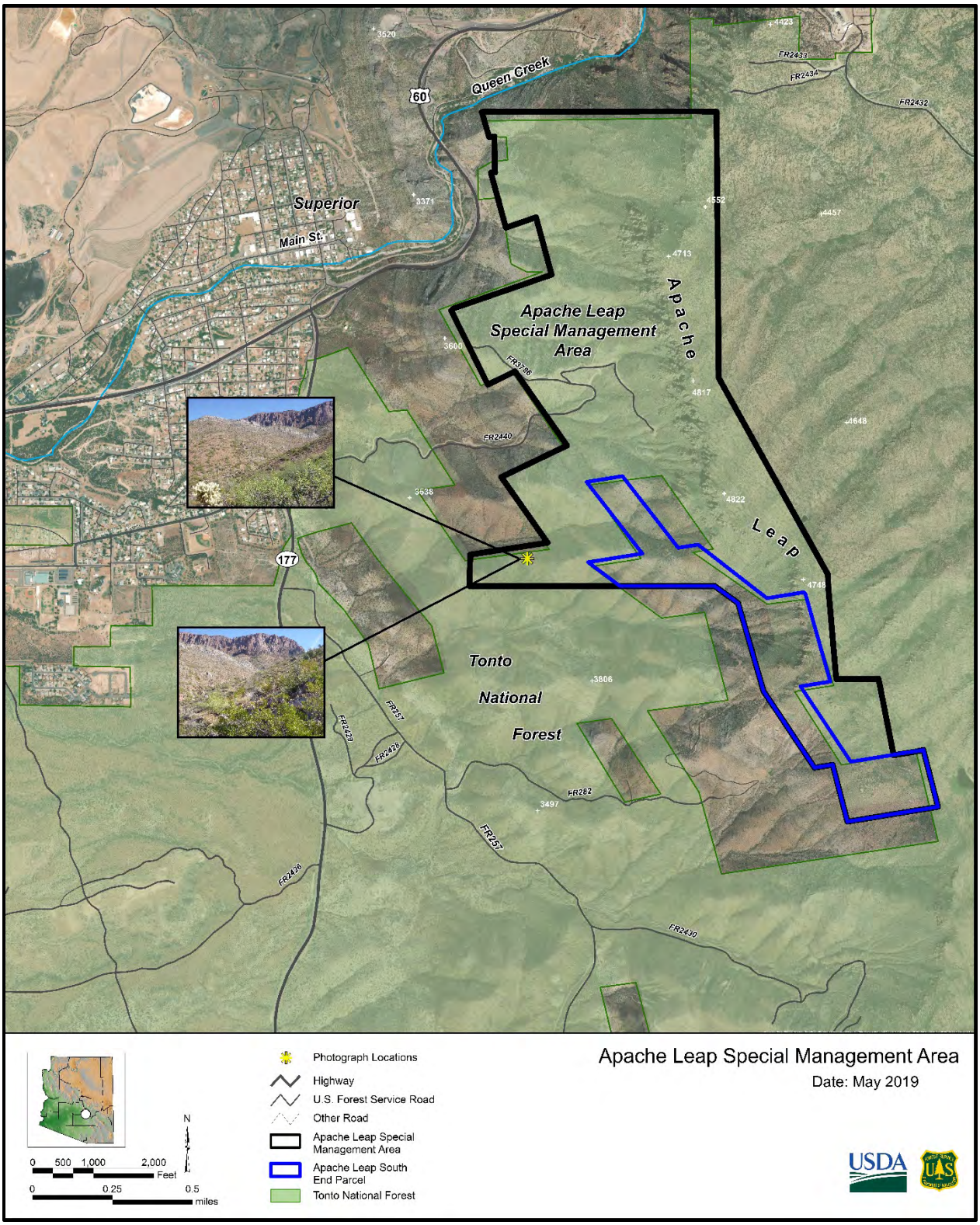


Figure B-2. Apache Leap Special Management Area and land exchange parcel

Drainages within the project area do not contain permanent surface water features and do not support riparian vegetation. Instead, the drainages generally contain greater densities of the same species that are present in the adjacent uplands. Additionally, no known springs occur within the Apache Leap South End Parcels.

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in August 2015, and identified no recognized environmental conditions (RECs) on the property. Historic-era mine features were noted during the work, but while there is potential for the historic mine features to impact groundwater or produce acid mine drainage, no discoloration or distressed vegetation was noted around the existing features. In addition, potential for impacts on surface or groundwater by contact with mineralized rock is not considered likely. Most adits are closed for human safety while allowing continued bat use.

## Cultural Resources

The parcels are generally characterized as undeveloped open space with no evidence of human occupation. A Class III cultural resources inventory was performed in 2016 and found three archaeological sites, two of which were new discoveries. Of these, one site was considered eligible for the National Register of Historic Places (NRHP). Additionally, numerous cultural resources inventories have identified sites representing Prehistoric, Protohistoric, and Historic Native American occupations and activities spanning several thousand years in the areas surrounding the parcels. Historic Euro-American activities have also been identified, including ranching, transportation, and utilities in combination with mining operations; these date to the late nineteenth century through the middle twentieth century.

## Key Documents Describing Apache Leap South End Parcels

- SWCA Environmental Consultants. 2017. “Apache Leap Special Management Area Management Plan: Heritage Resources Report.” August 1, 2017 (Tremblay 2017)
- SWCA Environmental Consultants. 2017. “Apache Leap Special Management Area Wildlife and Vegetation Specialist Report.” August 1, 2017 (Dugan 2017)
- SWCA Environmental Consultants. 2017. “Apache Leap Special Management Area Biological Evaluation.” August 1, 2017 (Campbell and Dugan 2017)
- U.S. Forest Service. 2014. Tonto National Forest’s Nomination of *Chi'chil Bildagoteel*, commonly known as Oak Flat and Apache Leap, to the National Register of Historic Places as an Apache Traditional Cultural Property. October 31, 2014 (Nez 2014)
- U.S. Forest Service. 2017. “Apache Leap Special Management Area Management Plan: Environmental Assessment and Finding of No Significant Impact.” August 1, 2017 (U.S. Forest Service 2017a)
- U.S. Forest Service. 2017. “Apache Leap Special Management Area: Management Plan.” December 1, 2017 (U.S. Forest Service 2017c)
- U.S. Forest Service. 2017. “Apache Leap Special Management Area Management Plan: Errata to Final Environmental Assessment.” December 1, 2017 (U.S. Forest Service 2017b)
- WestLand Resources Inc. 2015. “Phase I Environmental Site Assessment Apache Leap South End [Phase I Environmental Assessment Non-Federal Parcel Apache Leap South End Gila County, Arizona].” August 13, 2015 (WestLand Resources Inc. 2015b)

- WestLand Resources Inc. 2016. "A Cultural Resources Inventory of 106 Acres Along the South End of Apache Leap for Resolution Copper Mining, LLC, Pinal County, Arizona." June 23, 2016 (Daughtrey 2016)

## TANGLE CREEK PARCEL

### Parcel Description

Located in Yavapai County, Arizona, approximately 35 miles north of the towns of Cave Creek and Carefree, the Tangle Creek Parcel is a 148-acre private inholding within the Tonto National Forest (figures B-3 and B-4). The parcel would be administered by the Tonto National Forest, Cave Creek Ranger District. The Tangle Creek parcel lies within the Central Highlands physiographic province, a transition zone between the Basin and Range and the Colorado River provinces.

Figure B-3. Photograph of Tangle Creek parcel

The Tangle Creek Parcel is located near the center of a broad valley known as Bloody Basin, a rugged and scenic basin in central Arizona with abundant hiking, camping, and hunting opportunities. The parcel lies adjacent to Seven Springs Recreation Area, Cave Creek Campground and Trailhead, and Civilian Conservation Corps Campground, with known recreational uses that include fishing, boating, swimming, nature viewing, outdoor learning, and picnicking; however, no boating, fishing, or swimming occur on the Tangle Creek Parcel. The parcel was homesteaded in the 1890s by the Babbitt family and used for livestock grazing and farming through the 1990s. Developed features within the parcel are limited; the only remaining associated improvements include an overgrown dirt road, remnants of a concrete dam/revetment structure, water pipelines, a small concrete foundation, water troughs, and wells. The historically cultivated farm fields are in the process of reverting to open woodlands and thickets of hackberry, mesquite, and catclaw acacia. Resolution Copper does not use the parcel for any specific purpose. Several unimproved roads provide public access to the area and are likely used for recreational, grazing, and agricultural purposes. The parcel is within a grazing allotment that includes surrounding lands in all directions. The parcel also contains a power line transmission corridor. No active mining claims exist within the parcel.

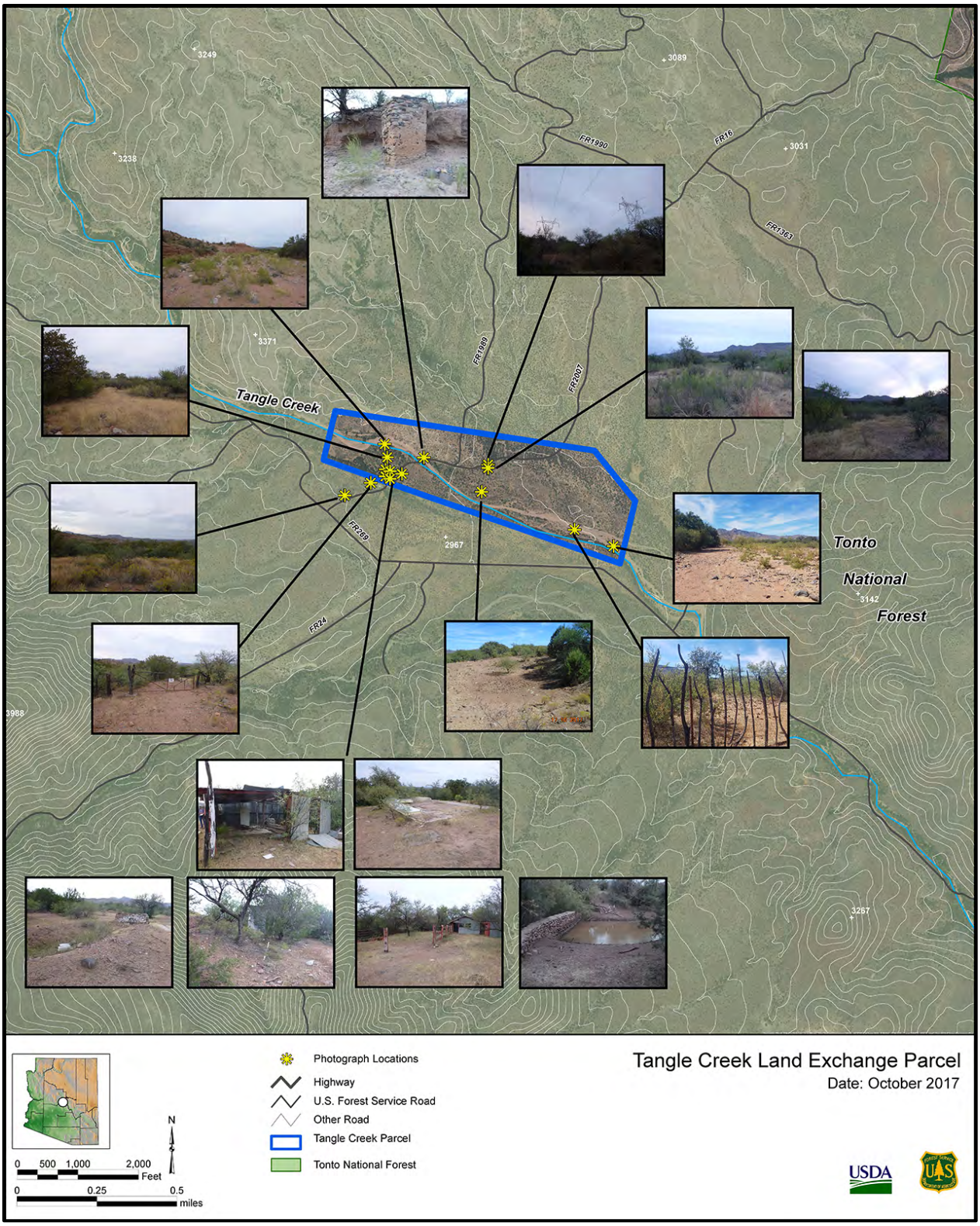


Figure B-4. Tangle Creek land exchange parcel

The parcel can be accessed from the west via Bloody Basin Road (NFS Road 269) from Interstate 17 or by traveling north from Carefree along Cave Creek Road (NFS Road 24).

## Geological Setting

This parcel is located along Tangle Creek in Bloody Basin, which is in the Central Highlands physiographic province, a transitional zone between the Basin and Range and the Colorado Plateau. The Bloody Basin area is a graben, bounded to the west by Cooks Mesa and to the east by the Mazatzal Mountains. It is mapped as Tertiary-aged deposits.

## Biological and Water Resources

Upland vegetation of the parcel is mapped as Great Basin Conifer Woodland; however, vegetation characteristic of the Arizona Upland Subdivision of the Sonoran Desertscrub, the Semi-Desert Grassland, and Sonoran Deciduous Riparian Forest biotic communities were also observed during field reconnaissance. Common plant species include one-seed juniper, oats grama, saguaro, sycamores, ash, and desert willow.

Features of the Tangle Creek Parcel include Tangle Creek, a spatially intermittent to perennial stream that bisects the parcel and acts as a substantial tributary to the Verde River (located approximately 10 miles downstream) and associated riparian habitat, as well as mature netleaf hackberry, mesquite, ash, and sycamore trees, which provide habitat for migratory birds and nesting songbirds. No aquatic biology surveys have been conducted. One spring, LX Spring, exists outside the parcel and water from this spring was conveyed to the parcel by pipeline. The water right for LX Spring water use at the Tangle Creek parcel is no longer active.

No critical habitats exist within the parcel. The 2004 ecological overview identified three special status species (under the Endangered Species Act [ESA]) with some potential to occur within the property: Arizona agave (endangered), Arizona cliffrose (endangered), and bald eagle (now delisted, but still protected under the Bald and Golden Eagle Protection Act [BGEPA]). More recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a Tonto National Forest sensitive species):

- ESA: western yellow-billed cuckoo (threatened); southwestern willow fly-catcher (endangered); Gila chub (endangered); spikedace (endangered)
- BGEPA: golden eagle
- Tonto National Forest sensitive species: lowland leopard frog; peregrine falcon; desert sucker; headwater chub; roundtail chub; pale Townsend's big-eared bat; spotted bat; Allen's lappet-browed or big-eared bat; western red bat; Sonoran desert tortoise; Parker's cylloepus riffle beetle

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in October 2016, and identified no RECs on the property. A prior Phase 1 environmental site assessment in 2004 had identified numerous potential environmental conditions associated with a building, but it was subsequently determined that the building was not on the parcel itself. In 2016, the only item noted was a drum that did not appear to contain more than traces of fluid and was not observed to be leaking. Resolution Copper undertook a substantial cleanup of the Tangle Creek parcel in 2018 to remove trash and other materials.

## Cultural Resources

A Class III cultural resources inventory was performed in 2016, recording 10 previously undiscovered archaeological sites, of which seven were recommended eligible for inclusion in the NRHP. In addition, 22 archaeological sites had been previously discovered within the vicinity of the parcel, many of which are indicative of substantial Formative period occupation.

## Key Documents Describing Tangle Creek Parcel

- WestLand Resources Inc. 2004. "Ecological Overview LX Bar Ranch Parcel, Yavapai County Arizona." March 8, 2004 (WestLand Resources Inc. 2004d)
- WestLand Resources Inc. 2016. "A Cultural Resources Inventory of the 148-Acre Tangle Creek Parcel, Yavapai County, Arizona: Resolution Copper." September 28, 2016 (Charest 2016b)
- WestLand Resources Inc. 2016. "Phase I Environmental Assessment Non-Federal Parcel, Tangle Creek (LX Bar Ranch) Yavapai County, Arizona, Resolution Copper." October 1, 2016 (WestLand Resources Inc. 2016c)

# TURKEY CREEK PARCEL

## Parcel Description

The Turkey Creek Parcel is a 147-acre parcel located approximately 8 miles southeast of the community of Pleasant Valley in Gila County, Arizona (figures B-5 and B-6). Also known as JX Ranch, the Turkey Creek Parcel is a private inholding within the Tonto National Forest and would be administered by the Tonto National Forest, Pleasant Valley Ranger District. It is located within the streambed and adjacent upland areas along Turkey Creek and Rock Creek in the Sierra Ancha Mountains within the Central Highlands physiographic province, a transitional zone between the Basin and Range and the Colorado Plateau provinces.

The parcel was formerly homesteaded in the 1880s and associated with Elmer D. Boody. Development includes a series of buildings and property improvements such as a house, barn, kitchen, storehouse, tool house, shop, well, and cultivated area. The parcel also includes remains of a trail, a small apple orchard, and a scattering of historical artifacts. A dry-laid masonry well that appears to have been filled in almost entirely by sediment or possibly trash was observed on the former homestead location. The Boody homestead would eventually become known as JX Ranch. Under Resolution Copper ownership, the parcel is not used for any purpose; however, there is evidence of dispersed recreation including hunting, nature viewing, hiking, picnicking, camping, and off-highway vehicle use. Overall, the parcel is characterized as mainly vacant open space that appears to have been used in the past for historical homesteading and grazing. Currently there are no active mining claims within the parcel.

The parcel can be accessed by going east and north approximately 22 miles from State Route 188 along multiple NFS Roads (71, 609, 416, and 2768).

Figure B-5. Photograph of Turkey Creek parcel

## Geological Setting

This parcel is located in the Sierra Ancha Mountains, which are in the Central Highlands physiographic province, a transitional zone between the Basin and Range and the Colorado Plateau. The parcel has middle Tertiary-aged conglomerate on the canyon's upper slopes, Precambrian-aged (middle Proterozoic) Dripping Springs Quartzite exposed in cliff faces adjacent to the stream bed, and Quaternary alluvium within the valley floor along Turkey Creek and Rock Creek.

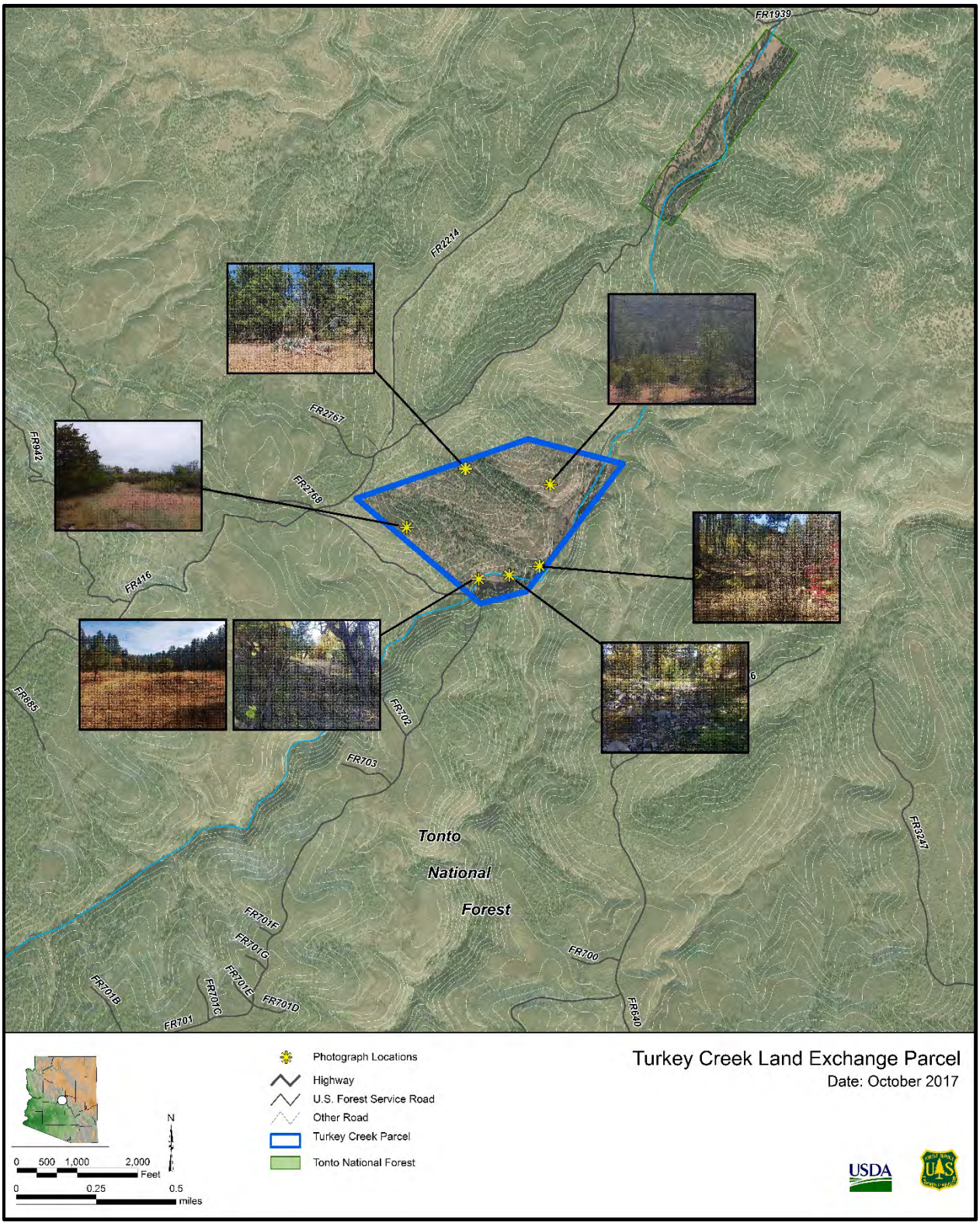


Figure B-6. Turkey Creek land exchange parcel

## Biological and Water Resources

Four biotic communities were observed during field reconnaissance: Petran Montane Conifer Forest, Madrean Evergreen Woodland, Interior Chaparral, and Great Basin Conifer Woodland; however, the upland vegetation on the parcel is only mapped as Great Basin Conifer Woodland biotic community. Common plants include ponderosa pine on north-facing slopes and alligator juniper, manzanita, and grasses on south-facing slopes. Riparian vegetation such as narrowleaf cottonwood, New Mexico locust, Arizona sycamore, and Gambel oak are present along Turkey Creek. Approximately one-third of the vegetation within the parcel was impacted by fires in the early 2000s, with some areas burning intensely, resulting in losses of entire stands of juniper, ponderosa pine, and manzanita. Natural vegetation is reestablishing, however. Within the parcel there is habitat for elk, mule deer, and native fish.

Additionally, the parcel is within Forest Service lands that contain Mexican spotted owl critical habitat, as well as two Mexican spotted owl protected activity centers. The 2004 ecological overview identified three special status species with some potential to occur within the property: Arizona agave (endangered), Chiricahua leopard frog (threatened), and bald eagle (now delisted, but still protected under the BGEPA). More recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a Tonto National Forest sensitive species):

- ESA: western yellow-billed cuckoo (threatened); southwestern willow fly-catcher (endangered); Chiricahua leopard frog (threatened); Mexican spotted owl (threatened); Gila chub (endangered); spikedace (endangered); northern Mexican gartersnake (threatened); narrow-headed gartersnake (threatened)
- BGEPA: golden eagle
- Tonto National Forest sensitive species: lowland leopard frog; peregrine falcon; northern goshawk; Sonora sucker; desert sucker; headwater chub; roundtail chub; pale Townsend's big-eared bat; spotted bat; Allen's lappet-browed or big-eared bat; western red bat

Turkey Creek is the dominant drainage feature in the parcel and has intermittent to perennial flow. Surface water features comprise ephemeral channels that are tributary to Turkey Creek in the Salt River's watershed.

Wildfires in the area in 2018 may have affected the property and surrounding lands.

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in October 2016, and identified no RECs on the property.

## Cultural Resources

A Class III cultural resources inventory of the parcel was performed in 2016 and found six previously undiscovered archaeological sites, with five of the sites recommended eligible for inclusion in the NRHP. Sites were dated to the Late Formative period (over a range of 1,000 years) and the Late Historic period.

## Key Documents Describing Turkey Creek Parcel

- WestLand Resources Inc. 2004. "Ecological Overview JX Ranch Parcel, Gila County, Arizona." March 31, 2004 (WestLand Resources Inc. 2004c)

- WestLand Resources Inc. 2016. "A Cultural Resources Inventory of the 146.78-Acre Turkey Creek Parcel, Gila County, Arizona: Resolution Copper." September 28, 2016 (Charest 2016b)
- WestLand Resources Inc. 2016. "Phase I Environmental Site Assessment Non-Federal Parcel, Turkey Creek (JX Bar Ranch) Gila County, Arizona." October 1, 2016 (WestLand Resources Inc. 2016f)

## CAVE CREEK PARCEL

### Parcel Description

The Cave Creek Parcel is a 149-acre parcel located approximately 7 miles north of Cave Creek in Maricopa County, Arizona, known also as 6L Ranch (figures B-7 and B-8). The Cave Creek Parcel is a private inholding surrounded by Tonto National Forest lands. Upon completion of the land exchange, the parcel would be administered by the Tonto National Forest, Cave Creek Ranger District. The parcel lies along the canyon floor and adjacent upland areas of Cave Creek in the Central Highlands physiographic province.

Figure B-7. Photograph of Cave Creek parcel

The Cave Creek parcel is located north of the Spur Cross Ranch Conservation Area, used for dispersed recreation activities such as hunting, camping, nature viewing, and hiking. The parcel was initially settled in the 1880s and used as a residence until the 1920s. Livestock grazing occurred on the parcel through 2001. Several ranching features were observed through field reconnaissance and include development such as a concrete watering trough, pipes, a steel cistern, a well, a collapsed dry-laid masonry outbuilding with tin roof, a wooden cattle chute, and a corral area. The parcel is largely devoid of development, and there is no evidence of recent human occupation within the parcel. The Cave Creek parcel can be accessed via Cave Creek Road and Spur Cross road to Forest Trail 4, on which a 40-minute walk on foot

is required to reach the parcel. Drivable access is limited at the Maricopa County Spur Cross Ranch Conservation Fence. No active mining claims exist within the parcel.

## Geological Setting

This parcel is located along Cave Creek, which drains the southern portion of the New River Mountains, a rugged range defining the eastern portion of the Agua Fria River valley. Notable peaks around this parcel are Skull Mesa to the east, Sugarloaf Mountain to the southwest, and Black Mesa to the west and north. The parcel lies in the Central Highlands physiographic province. The New River Mountains comprise Quaternary- and Tertiary-aged basalt-covered tablelands cut by streams through Precambrian-aged metavolcanic rocks. Most of the parcel is mapped as volcanic and sedimentary rock dated from the middle Miocene to Oligocene. Small portions of the northern and southern ends of the parcel are mapped as Early Proterozoic Metavolcanic rocks.

## Biological and Water Resources

Three biotic communities have been observed within the parcel: Interior Chaparral, Arizona Upland Subdivision of Sonoran Desertscrub, and Deciduous Riparian Forest along Cave Creek. Common plant species include saguaro, foothill paloverde, ironwood, barberry, buckbrush, Arizona sycamore, velvet ash, and Goodding's willow. Wildlife habitat for migratory songbirds, raptors, amphibians, javelina, mule deer, and coyotes has been identified within the parcel. No aquatic species surveys have been conducted within the parcel.

The 2004 ecological overview identified three special status species with some potential to occur within the property: bald eagle (now delisted, but still protected under the BGEPA), Gila topminnow (endangered), and cactus ferruginous pygmy owl (now delisted).

More recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a Tonto National Forest sensitive species):

- ESA: western yellow-billed cuckoo (threatened); southwestern willow fly-catcher (endangered); lesser long-nosed bat (since delisted)
- BGEPA: golden eagle
- Tonto National Forest sensitive species: lowland leopard frog; peregrine falcon; pale Townsend's big-eared bat; spotted bat; Allen's lappet-browed or big-eared bat; western red bat; Sonoran desert tortoise; Parker's cylloepus riffle beetle

Surface water features include Cave Creek, which originally flowed south toward the Salt River in Phoenix; however, the flow is now intercepted by the Cave Creek Dam in the northern Phoenix metropolitan area and the canal system in Phoenix, which diverts the stream to discharge to the Agua Fria River. The Cave Creek riparian corridor runs through the center of the parcel and drains the southern portion of the New River Mountains. It is ephemeral to intermittent with some perennial reaches in the vicinity of the parcel.

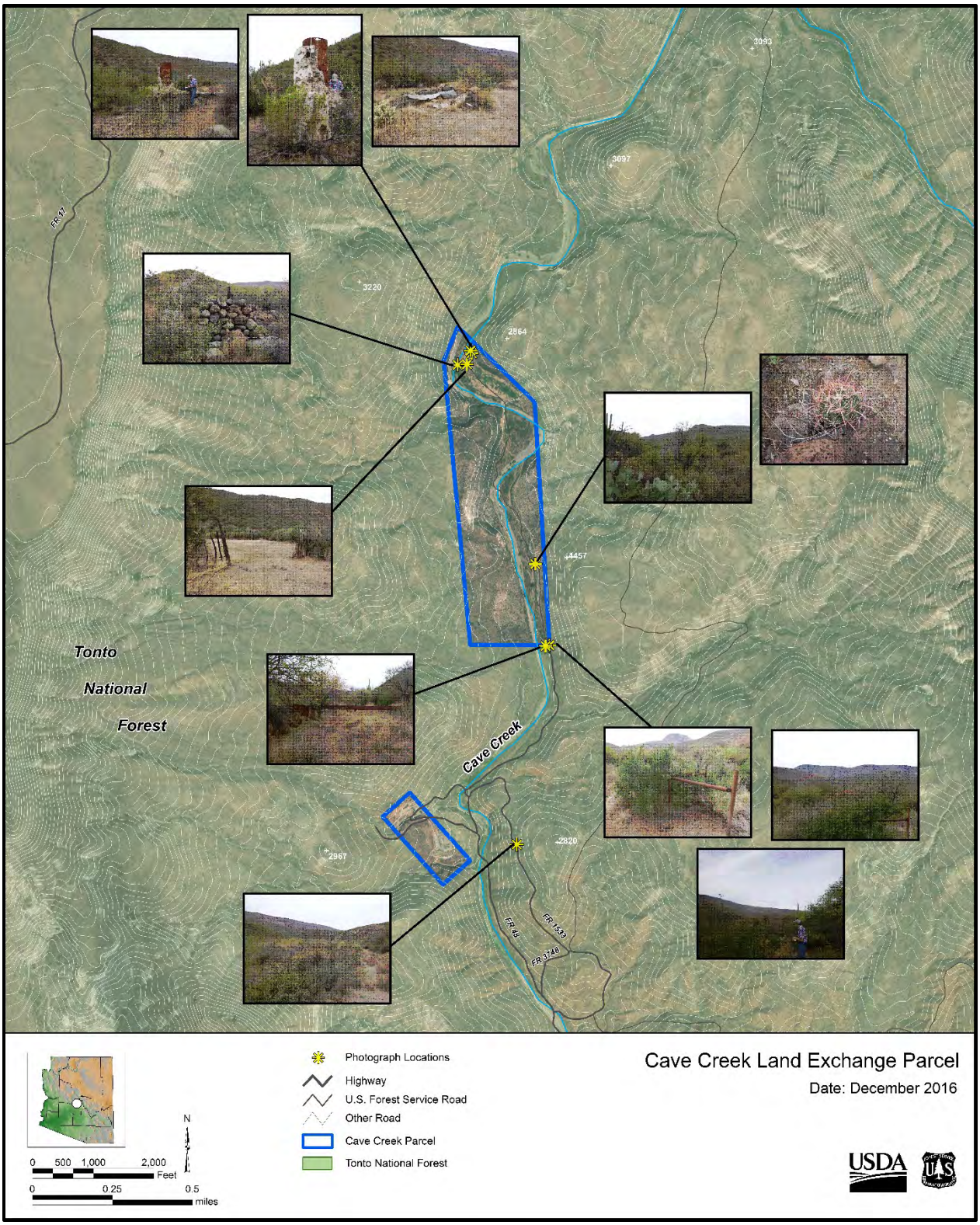


Figure B-8. Cave Creek land exchange parcel

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in September 2016, and identified no RECs on the property.

## Cultural Resources

Prehistorically, the parcel and area were extensively used and occupied by indigenous cultures. A Class III cultural resource inventory was performed in 2016, and identified six archaeological sites including four that were previously undiscovered. All six sites were recommended for inclusion in the NRHP. The sites date to the Late Archaic and Early to Middle, Middle, and Late Formative periods, as well as the Late Historic period, and include prehistoric petroglyphs. Additionally, stone structures, grinding areas, and more petroglyphs have been found in areas surrounding the parcel.

## Key Documents Describing Cave Creek Parcel

- WestLand Resources Inc. 2004. "Ecological Overview: 6L Ranch Parcel, Yavapai County, Arizona." July 19, 2004 (WestLand Resources Inc. 2004a)
- WestLand Resources Inc. 2016. "Phase I Environmental Site Assessment Non-Federal Parcel, Cave Creek (6L Ranch) Maricopa County, Arizona, Resolution Copper." September 1, 2016 (WestLand Resources Inc. 2016e)
- WestLand Resources Inc. 2016. "A Cultural Resources Inventory of the 149.18-Acre Cave Creek Parcel, Maricopa County, Arizona: Resolution Copper." September 28, 2016 (Charest and Francis 2016)

# EAST CLEAR CREEK PARCEL

## Parcel Description

The East Clear Creek Parcel is a 640-acre private inholding within the Coconino National Forest, located north of Payson in Coconino County, Arizona (figures B-9 and B-10). The parcel would be administered by the Mogollon Rim Ranger District. The East Clear Creek Parcel is located along the canyon floor and adjacent upland areas of East Clear Creek in the Colorado Plateau physiographic province, a transitional zone between the upper plateau and riparian ecosystems on the Mogollon Rim.

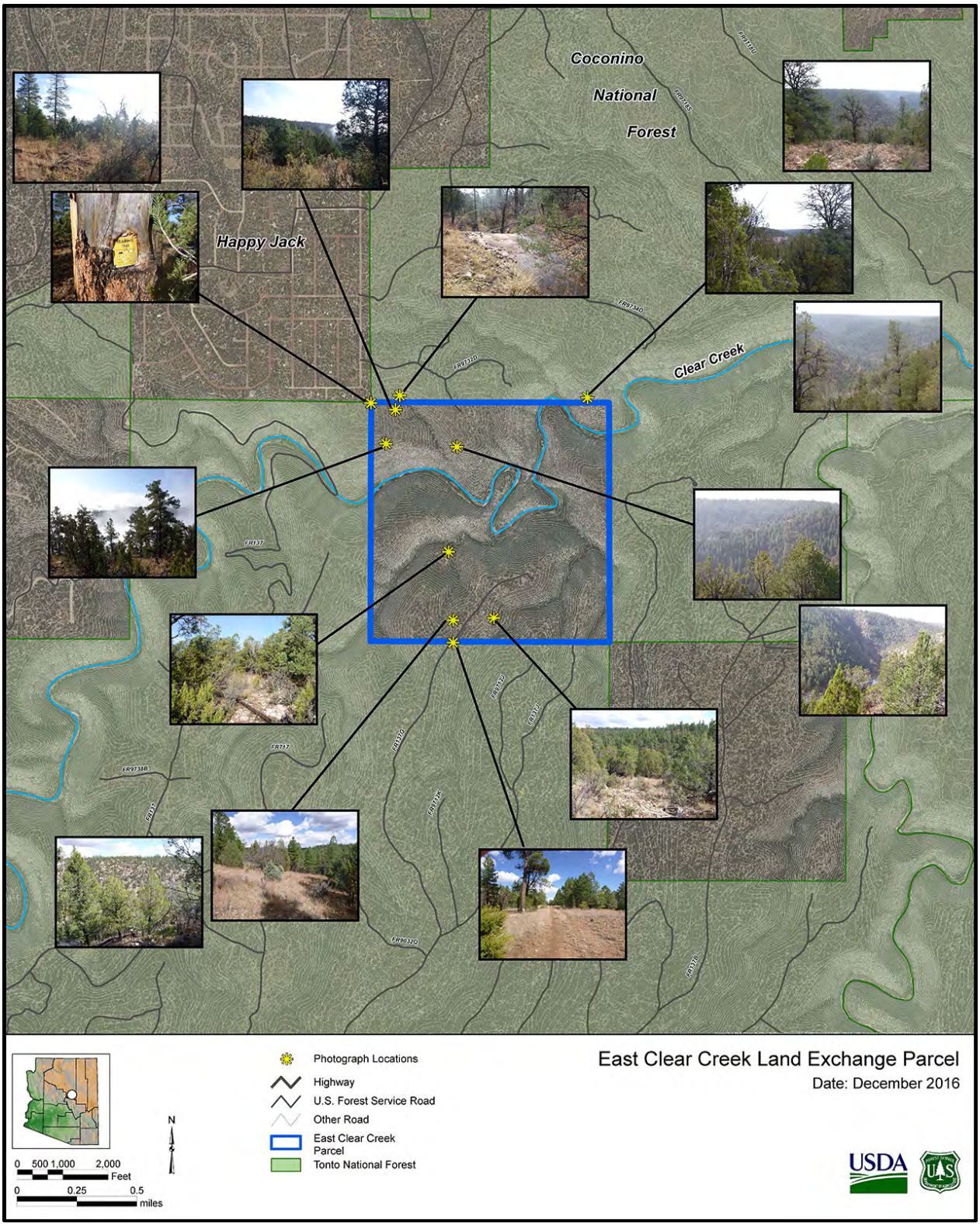


Figure B-9. East Clear Creek land exchange parcel

The only known current and historical uses of the area are recreation and logging. Designated pack trails are present on Forest Service land south and east of the parcel. Hiking, fishing, nature viewing, hunting, and camping are available on the public lands surrounding the parcel. The parcel is surrounded by the T Bar grazing allotment; however, Resolution Copper does not manage this grazing lease. BLM records show a Record of Patent for the parcel to the Santa Fe Pacific Railroad Company for the purpose of constructing a railroad and telegraph line from Missouri and Arkansas to the Pacific Coast; however, there is no evidence within the parcel or adjoining areas that the railroad was ever developed. Logging has historically been conducted in the vicinity of the parcel, with the most recent timber sale occurring in the late 1980s. There is a stock tank near the southern boundary of the parcel, suggesting livestock grazing as a potential historical land use, although not within at least the last 10 years. There is no recent development on the parcel. Dirt roads are the only developed, formal use. No active mining claims exist within the parcel.

Figure B-10. Photograph of East Clear Creek parcel

The parcel can be accessed from the south via State Route 87 and traveling approximately 12 miles to the east and north. There is no designated access into the property from the north, but it is adjacent to the Starlight Pines subdivision.

## Geological Setting

This parcel is located in the canyon floor and adjacent uplands along East Clear Creek. The East Clear Creek parcel is in the Colorado Plateau physiographic province, which is bounded on the south by the Mogollon Rim and is characterized by nearly horizontal, stratified sedimentary rocks that have been eroded into numerous canyons, plateaus, and scarps. The canyon walls are steep adjacent to East Clear Creek and upland areas are rugged. The entire parcel is mapped as Permian-aged sedimentary rocks.

## Biological and Water Resources

The upland vegetation on the East Clear Creek parcel has one recorded biotic community: Petran Montane Conifer Forest, although field reconnaissance also observed Interior Riparian Deciduous Forest and Great Basin Conifer Woodland biotic communities. The upland vegetation is dominated by second-growth ponderosa pine with Gambel oak and New Mexico locust on north-facing slopes, while south-facing slopes are generally scrub live oak woodland with juniper and pinyon pine. Riparian habitat includes species such as boxelder, cottonwood, Arizona alder, and Bonpland willow. Riparian wildlife habitat and raptor nesting and roosting sites are present within the parcel.

The 2017 ecological overview and more recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a Coconino National Forest sensitive species):

- ESA: Little Colorado spinedace (threatened); Mexican spotted owl (threatened); Chiricahua leopard frog (threatened)
- BGEPA: bald eagle; golden eagle
- Coconino National Forest sensitive species: peregrine falcon; Little Colorado sucker; northern goshawk; rock fleabane; roundtail chub; Arizona toad

The dominant surface water feature on the parcel is East Clear Creek, a substantial perennial tributary of the Little Colorado River located approximately 71 river miles downstream (northeast) of the parcel. Analytical results from water quality sampling in 1976 suggest that all chemical constituents in East Clear Creek are within acceptable water quality standards for the support of cold-water fisheries habitat. More recent data from the U.S. Environmental Protection Agency suggest that water quality in East Clear Creek is fully supportive of agricultural use; fish, shellfish, and wildlife protection and propagation; and primary-contact recreation. Other surface water features include minor tributaries that are likely ephemeral to intermittent. Active registered instream flow surface water rights in the Little Colorado watershed sourced from East Clear Creek exist in the parcel as well. In 1993, preliminary analysis was conducted to document a 25-mile portion of East Clear Creek as being eligible with a scenic designation under the Wild and Scenic Rivers Act (U.S. Forest Service 1993). The outstanding remarkable values of this segment include scenic resources and threatened and endangered fish species habitat. The East Clear Creek parcel is within the proposed eligible section. As of 2019, the segment has not been officially designated.

Wildfires in the area in 2018 may have affected the property and surrounding lands.

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in September 2016, and identified no RECs on the property.

## Cultural Resources

A Class III cultural resources inventory performed in 2016 identified three newly recorded archaeological sites, all of which were recommended for inclusion in the NRHP. These archaeological sites point to use by Native Americans and Late Historic period Euro-American uses. In addition, one historical feature was identified just outside the boundary of the parcel.

### Key Documents Describing East Clear Creek Parcel

- WestLand Resources Inc. 2016. "Phase I Environmental Assessment Non-Federal Parcel, East Clear Creek, Coconino County, Arizona, Resolution Copper." September 1, 2016 (WestLand Resources Inc. 2016b)
- WestLand Resources Inc. 2016. "A Cultural Resources Inventory of the 633.88-Acre East Clear Creek Parcel, Coconino County, Arizona." September 28, 2016 (Charest 2016c)
- WestLand Resources Inc. 2017. "Ecological Overview for East Clear Creek Parcel, Coconino County, Arizona, Resolution Copper." January 24, 2017 (WestLand Resources Inc. 2017b)

## *Offered Parcels – Bureau of Land Management*

Parcels to be transferred from Resolution Copper to the United States and administered by the BLM are detailed in the following text. Additional details regarding the special status species present on the offered lands being transferred to the BLM are summarized in table B-4 at the end of this appendix.

### LOWER SAN PEDRO RIVER PARCEL

### Parcel Description

The Lower San Pedro River Parcel is an approximately 3,050-acre parcel located near Mammoth in Pinal County, Arizona (figures B-11 and B-12). It lies within the Basin and Range physiographic province, characterized by mountain ranges trending northwest-southeast, separated by broad alluvial valleys. The parcel is located within one of these valleys, with the Galiuro Mountains to the east and the Santa Catalina Mountains to the south. In November 1988, Congress designated 40 miles and 58,000 acres of the upper San Pedro corridor as the San Pedro Riparian National Conservation Area. The parcel would be administered by the BLM Gila District, Tucson Field Office. The parcel is patented private land for which Swift Land and Cattle, LLC, a subsidiary of Resolution Copper, holds active mining claims.

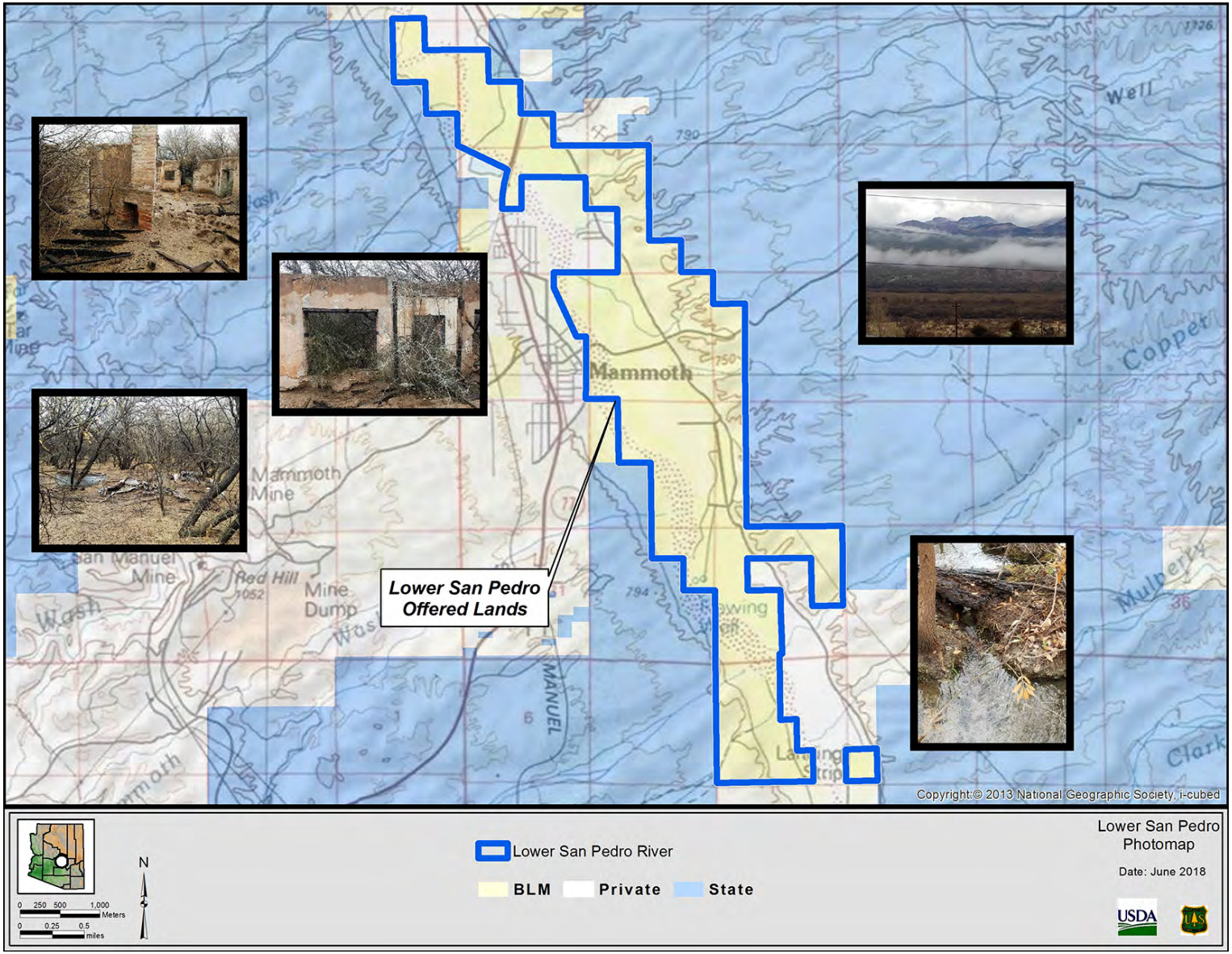


Figure B-11. Lower San Pedro River land exchange parcel

Figure B-12. Photograph of Lower San Pedro River parcel

The Lower San Pedro River Parcel is mostly undeveloped, and the parcel is surrounded by undeveloped land. The developed areas have been primarily used, either currently or historically, for grazing, other agricultural, former residential, or research uses, as seen from abandoned structures, corrals, and farm fields. Approximately 15 percent of the parcel has been cleared of native vegetation. Other known uses of the Lower San Pedro River Parcel are primarily recreational: off-road vehicle use, hunting, and a town park which includes baseball and picnicking facilities. A 1.2-mile-long trail for public access is located within the parcel south of Copper Creek Road. Transfer of the Lower San Pedro River Parcel would render the area unavailable for future housing development.

Portions of the parcel were cultivated from at least 1945 until at least the 1950s when lead and arsenate pesticides and defoliants were historically used on certain crops in Arizona, leading to the possible presence of pesticide residuals in the formerly cultivated soils within the parcel. The parcel is currently managed as an open space by The Nature Conservancy on behalf of Resolution Copper. An on-site storage unit is used for the property manager's gear.

## Geological Setting

This parcel is located within the Basin and Range physiographic province, which is characterized by elongated mountain ranges trending northwest-southeast, separated by broad alluvial valleys. The parcel is in a broad alluvial valley with the Galiuro Mountains to the east and the Santa Catalina Mountains to the south. Most of the surface geology of the parcel is Holocene-aged river alluvium. An upland area in the eastern portion of the parcel is mapped as deposits from the Pliocene to Middle Miocene, and the extreme southwestern corner of the parcel is mapped as Quaternary-aged surficial deposits.

## Biological and Water Resources

Vegetation on the Lower San Pedro River Parcel includes the Arizona Uplands Subdivision of Sonoran Desertscrub and Sonoran Deciduous Riparian Forest biotic communities. Plant species commonly occurring within the parcel include saguaro, velvet mesquite, creosote bush, several species of cholla cacti, and foothill paloverde. The riparian corridor in the parcel includes more than 800 acres of mesquite woodland that features a wetland fed by a flowing thermal artesian well. The parcel's riparian areas and woodlands provide habitat for a wide variety of wildlife, including many migratory bird species, lowland leopard frogs, and native fish. Other riparian species present include desert willow, Goodding's willow, graythorn, Fremont cottonwood, and the non-native tamarisk.

The 2003 ecological overview identified three special status species with some potential to occur within the property: cactus ferruginous pygmy owl (now delisted); southwestern willow fly-catcher (endangered); and western yellow-billed cuckoo (threatened). More recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a BLM sensitive species):

- ESA: Gila chub (endangered); jaguar (endangered); ocelot (endangered)
- BGEPA: bald eagle; golden eagle
- BLM Gila District sensitive species with known or potential occurrence: peregrine falcon; lowland leopard frog; Arizona grasshopper sparrow; ferruginous hawk; gilded flicker; desert purple martin; Gila longfin dace; desert sucker; Sonora sucker; roundtail chub; monarch butterfly; pale Townsend's big-eared bat; greater western mastiff bat; Allen's lappet-browed or big-eared bat; lesser long-nosed bat; California leaf-nosed bat; cave myotis; Sonoran desert tortoise; desert ornate box turtle

Several large washes exist on the parcel, including Cooper, Mammoth, and Turtle Washes, all tributary to the San Pedro River. The San Pedro River is ephemeral to intermittent along the approximately 53,800-foot reach through the parcel; an uncapped artesian well supports a wetland adjacent to the river channel. The San Pedro River is unique as it is one of only two major rivers that flow north out of Mexico into the United States and is one of the few remaining free-flowing rivers in the Southwest. The unique qualities of the San Pedro River ecosystem have earned this riverine system The Nature Conservancy's designation as one of the "Last Great Places on Earth" and it is one of the more important riparian habitats in the Sonoran and Chihuahuan Deserts.

The parcel contains registered wells that indicate that water levels are generally shallow, at less than 60 feet below the ground surface. Two wells on-site that are monitored by The Nature Conservancy of Arizona indicate that groundwater levels are less than 35 feet below the ground surface. Active surface water rights exist for diverting water for wildlife use on the parcels.

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in November 2017, and identified several RECs on the property. These include two known fuel releases near the property boundaries (but not within the property), the Town of Mammoth wastewater treatment plant that has permits to discharge pollutants to both the aquifer and surface water upstream of the property, a nearby dry-cleaning operation, and informal dumping. In addition, the former cultivation of the land from at least 1945 until at least the 1950s was noted, as lead and arsenate (arsenic) pesticides and defoliants were historically used on certain crops in Arizona. It is unknown if routine agricultural application of pesticides has occurred on the property, therefore, it is possible that pesticide residuals (chlorinated pesticides, arsenic, and lead) may be present in the formerly cultivated soils on the property. RECS are not

indications that contamination actually exists; these are typically noted so further investigation can take place.

Several cleanups have taken place on the property; additional cleanups are planned in conjunction with the BLM to identify the structures and features desired to remain after completion of the land exchange.

### Cultural Resources

A Class III cultural resources inventory performed in 2017 identified 59 archaeological sites within the parcel; 37 of these sites had not been previously identified. Forty sites are recommended eligible for inclusion in the NRHP and one site has been determined eligible. The sites cover a wide range of Prehistoric and Historic periods.

### Key Documents Describing Lower San Pedro River Parcel

- The Nature Conservancy. 2016. "7B Ranch Management Plan." October 1, 2016 (Nature Conservancy 2016)
- Tucson Audubon Society. 2010. "Avian surveys conducted by Audubon Arizona IBA Program at 7B Ranch, Lower San Pedro River, Mammoth, Arizona, 2006–2010." January 1, 2010 (Wilbor 2010)
- WestLand Resources Inc. 2003. "Ecological Overview: San Pedro River Parcel, Pinal County, Arizona." September 10, 2003 (WestLand Resources Inc. 2003)
- WestLand Resources Inc. 2017. "A Cultural Resources Inventory of 3,125 Acres of Private Land Along the Lower San Pedro River Near Mammoth, Pinal County, Arizona, Resolution Copper." April 11, 2017 (Gruner 2017)
- WestLand Resources Inc. 2017. "Phase I Environmental Site Assessment Non-Federal Parcel, Lower San Pedro River, Pinal County, Arizona, Resolution Copper." November 1, 2017 (WestLand Resources Inc. 2017d)

## APPLETON RANCH PARCEL

### Parcel Description

The Appleton Ranch Parcel includes approximately 940 acres of non-contiguous private lands south of Elgin in Santa Cruz County, Arizona (figures B-13 and B-14). The parcels are within the Appleton-Whittell Research Ranch and Las Cienegas National Conservation Area. The parcels are to be administered by the BLM Gila District, Tucson Field Office, as part of the Las Cienegas National Conservation Area. The Las Cienegas National Conservation Area, established in 2000, is a 45,000-acre conservation area containing cottonwood-willow riparian forests and marshlands associated with Cienega Creek, rolling grasslands, and woodlands. Established in 1969 by the Appleton family in partnership with the National Audubon Society, Forest Service, and BLM, the Appleton-Whittell Research Ranch is a sanctuary for native plants and animals and a research facility for the study of grassland ecosystems. The ranch is currently managed by the National Audubon Society.

Figure B-13. Photograph of Appleton Ranch parcel

The Appleton Ranch Parcels are unpatented private land and have no active mining claims. Federal and State lands surrounding the area are used principally for livestock grazing as well as dispersed recreational activities including hunting, camping, off-road vehicle use, and hiking. Grazing operations were the primary use until 1969, when the property owner ceased ranching operations to enter into agreements with the BLM, Forest Service, and Audubon Society to use the Research Ranch to study grassland ecology. Although technically not part of the Research Ranch, management on the parcels has been essentially the same: no livestock grazing or other ranching operations, limited residential use, and low-impact ecological study.

Remaining structures within the parcel include a few windmills, wells, and numerous small earthen-bermed reservoirs. These features are accessible via primitive dirt roads from the Research Ranch primitive road network. Additionally, one area was used for residential purposes from the 1980s until 2002 when it was destroyed by a fire. The fire debris was disposed of off-site, leaving only the house foundation and septic system.

## Geological Setting

These parcels are located along the streambeds and adjacent upland areas of Post, Vaughn, and O'Donnell Canyons. The upland areas drained by the three on-site streams are known as the Canelo Hills, rolling terrain that include the Appleton Ranch parcels. The Canelo Hills are in the southern Basin and Range physiographic province and are composed of volcanic and sedimentary rocks. A veneer of soil overlies the bedrock on the upland areas, and eroded material from these uplands has accumulated as alluvium in canyon bottoms. The easternmost parcel's surface geology is mapped as surficial deposits that are

predominantly from the Early Pleistocene to Late Pliocene; the western portion is mapped as deposits dating from the Pliocene to Middle Miocene; and the southeastern corner is mapped as sedimentary rocks from the Middle Miocene to Oligocene. The other two parcels are mapped as deposits from the Pliocene to Middle Miocene.

## Biological and Water Resources

The ranch contains more than 90 species of native grass and 480 native plant species and is used by more than 200 species of birds for wintering, breeding, or migratory habitat.

Biotic communities within the parcels include Semidesert Grassland and Madrean Evergreen Oak Woodland. Grasslands are much more extensive than are the oak woodlands. The grassland varies markedly in species composition, density, and structure in the northern part of the Appleton Ranch Parcel, with short-grass grasslands found on south-facing slopes, medium-sized grass stands in swales and north-facing ridges, and tall-grass stands of sacaton in the broader floodplains along several of the washes. Woody vegetation is present in some upland areas as juniper woodlands, and along watercourses as mesquite bosques with very limited stands of cottonwood and desert willow. Transfer of the parcels to public ownership would ensure seamless management of the surrounding ecological preserve and contribute to its continued protected status. Primary values of the surrounding Research Ranch that would become extended to Appleton Ranch through acquisition include the following: to provide a wildlife sanctuary that is ungrazed by cattle, conduct or promote ecological research, and to provide education about sustainable land management. Large mammals such as pronghorn, deer, peccaries, and coyotes are present within the parcel and pass through often.

The 2004 ecological overview identified 13 special status species with some potential to occur within the property: Huachuca water umbel (endangered); Canelo Hills ladies' tresses (endangered); Gila chub (endangered); Gila topminnow (endangered); desert pupfish (endangered); Chiricahua leopard frog (threatened); Mexican spotted owl (threatened); bald eagle (since delisted but still protected under the BGEPA); western yellow-billed cuckoo (threatened); ocelot (endangered); jaguar (endangered); lesser long-nosed bat (since delisted); and Huachuca springsnail (candidate species, not listed). More recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a BLM sensitive species):

- ESA: northern Mexican gartersnake (threatened)
- BGEPA: bald eagle; golden eagle
- BLM Gila District sensitive species with known or potential occurrence: peregrine falcon; lowland leopard frog; Arizona grasshopper sparrow; ferruginous hawk; gilded flicker; Gila longfin dace; desert sucker; Sonora sucker; roundtail chub; monarch butterfly; pale Townsend's big-eared bat; greater western mastiff bat; Allen's lappet-browed or big-eared bat; lesser long-nosed bat; California leaf-nosed bat; cave myotis; Sonoran desert tortoise; desert ornate box turtle; western burrowing owl

The Appleton Ranch parcels are located along streambeds and adjacent upland areas of Post, Vaughn, and O'Donnell Canyons, all of which flow north-northeast toward the Babocomari River approximately 1.5 miles north of the closest parcel boundaries. The Babocomari River is an ephemeral to perennial tributary to the perennial San Pedro River, which flows north and northwest to join the Gila River, eventually flowing westward across Arizona to the Colorado River.

Groundwater levels on or near the property appear at relatively shallow depths (i.e., generally less than 100 feet below surface). Surface water rights exist for stock ponds and erosion-control structures on the Appleton Ranch parcels.

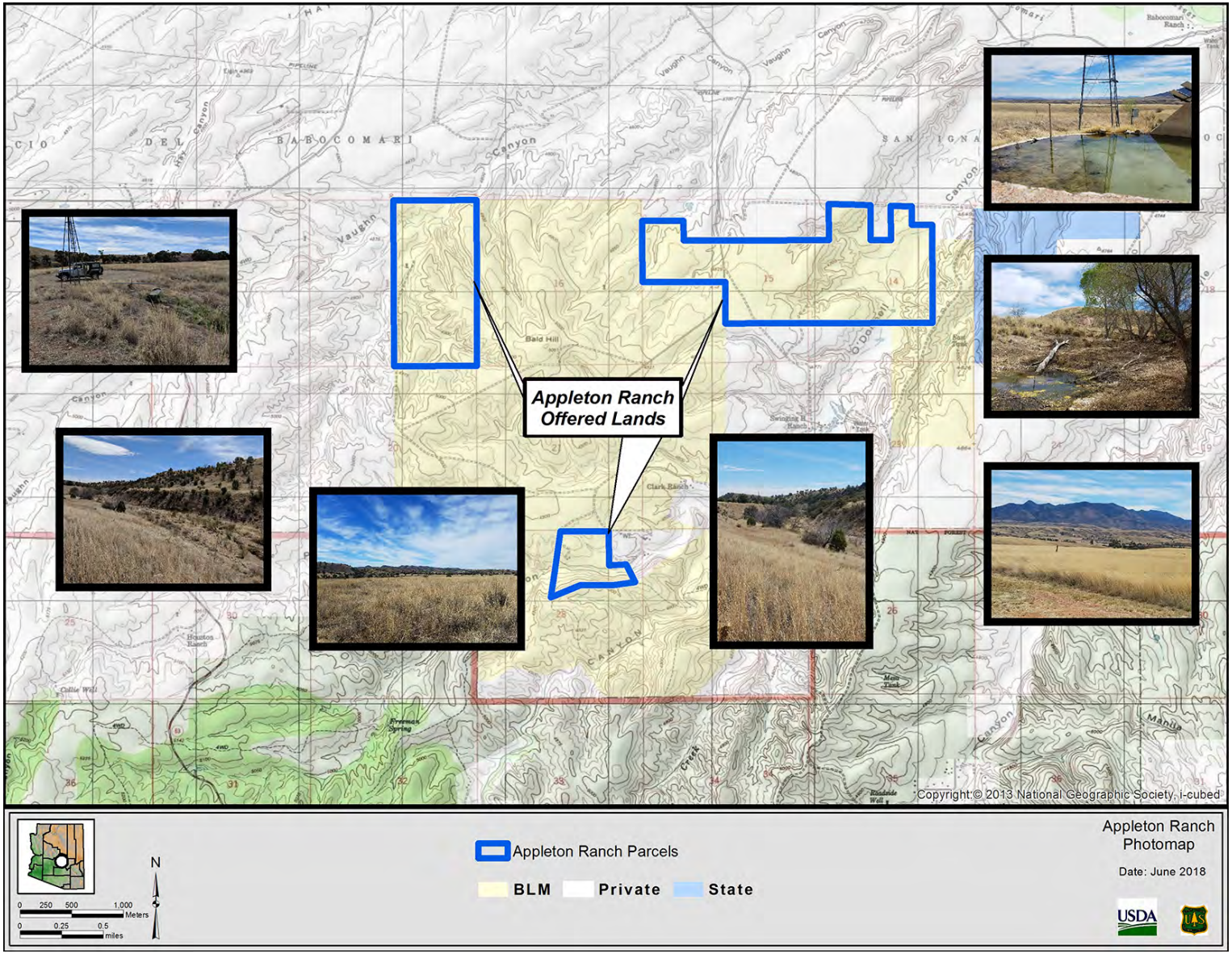


Figure B-14. Appleton Ranch land exchange parcels

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in September 2016, and identified no RECs on the property.

## Cultural Resources

A Class III cultural resources inventory performed in 2015 identified three archaeological sites within the parcel, related to Native American resource procurement and processing activities and historic-era ranching. Two sites were recommended eligible for inclusion in the NRHP.

## Key Documents Describing Appleton Ranch Parcels

- Breckenfeld, D.J., and D. Robinett, Natural Resources Conservation Service. 2001. "Soil and Range Resource Inventory of the National Audubon Society Appleton-Whittell Research Ranch, Santa Cruz County, Arizona." April 1, 2001 (Breckenfeld and Robinett 2001)
- Cogan, R.C., Conservation Coordinator, Appleton-Whittell Research Ranch, National Audubon Society. 2012. "Herpetofauna of the Appleton-Whittell Research Ranch." November 1, 2012 (Cogan 2012)
- McLaughlin, S.P., E.L. Geiger, and J.E. Bowers. 2001. "Flora of the Appleton-Whittell Research Ranch, northeastern Santa Cruz County, Arizona." January 1, 2001 (McLaughlin et al. 2001)
- WestLand Resources Inc. 2004. "Ecological Overview Appleton Ranch Parcel, Santa Cruz County, Arizona." May 26, 2004 (WestLand Resources Inc. 2004b)
- WestLand Resources Inc. 2015. "A Cultural Resources Inventory of 940 Acres Within the Appleton-Whittell Research Ranch for Resolution Copper Mining, LLC." December 1, 2015 (Daughtrey 2015)
- WestLand Resources Inc. 2016. "Phase I Environmental Site Assessment Non-Federal Parcel, Appleton Ranch, Santa Cruz County, Arizona Resolution Copper." September 1, 2016 (WestLand Resources Inc. 2016d)

# DRIPPING SPRINGS PARCEL

## Parcel Description

The Dripping Springs Parcel is a 160-acre parcel located northeast of Kearny in Gila and Pinal Counties, Arizona, in the Basin and Range physiographic province (figures B-15 and B-16). It lies within a rugged upland area northeast of the Gila River, which is the main drainage feature for the area. The parcel, situated in the Dripping Spring Mountains near Tam O'Shanter Peak and Steamboat Mountain, is almost completely surrounded by BLM-administered lands, with some adjacent Arizona State Land Department–administered State Trust land. The parcel would be administered by the BLM Gila District, Tucson Field Office. The parcel is unpatented private land and has no active mining claims.

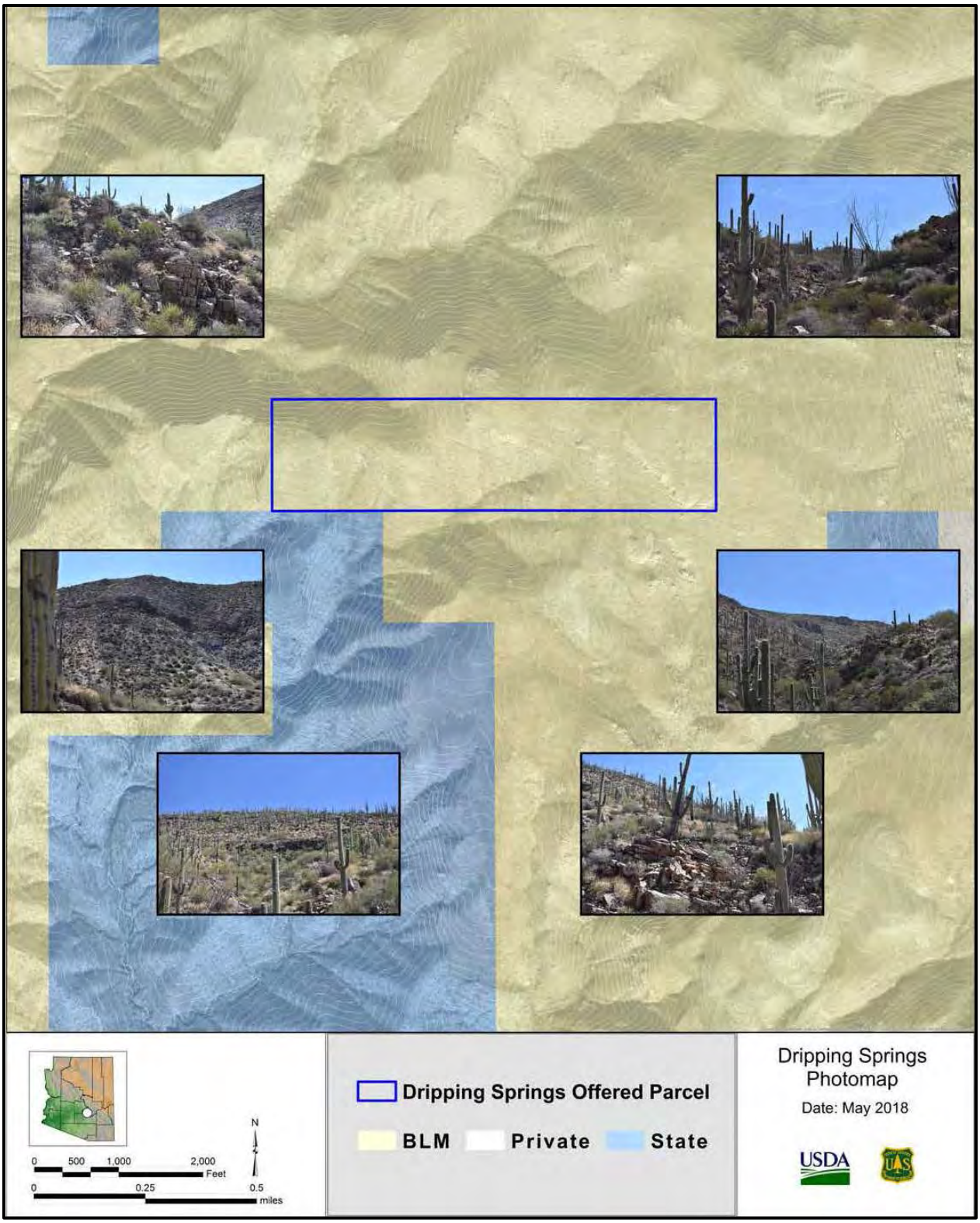


Figure B-15. Dripping Springs land exchange parcel

Figure B-16. Photograph of Dripping Springs parcel

The parcel's abundant rock formations are known for offering recreational rock-climbing opportunities. The Arizona State Parks Board, recognizing the value of this climbing resource, has taken preliminary steps toward the creation of a state park in this location. Hunting is also a permitted recreational activity in the area. Historically the areas surrounding the parcel were the focus of prospecting, mining, and settlement during the Historic period; however, limited homesites, mines, or other features have been found within the Dripping Springs Parcel. In general, the parcel is characterized as undeveloped open space, with past land use limited to small-scale mine exploration, intermittent hunting and recreational shooting, and possibly hiking. Land use in the surrounding areas appears to be similar to the Dripping Springs Parcel but may also include livestock grazing. Vehicular access to the parcel is unavailable as no road accesses the area. Because the property is only accessible by overland hiking across rugged terrain, the parcel has been effectively isolated from human use and has not been subjected to overuse by hikers, off-road vehicle use, hunters, miners, or ranchers. Transfer of management of the Dripping Springs Parcel to the BLM would require a permit to perform recreational and resource use activities generating significant noise, light, and dust disturbances.

## Geological Setting

This parcel is in the Dripping Spring Mountains northeast of Kearny, which is a rugged upland area northeast of the Gila River, the main drainage feature for the region. Notable peaks are Steamboat Mountain to the west and Tam O'Shanter Peak to the southeast. This parcel is within the Basin and Range

physiographic province and the Dripping Spring Mountains have extensive and complex fault systems composed of tilted fault blocks. The surface geology of the parcel is predominantly sedimentary rocks of Precambrian age (Middle Proterozoic). A fault bisects the parcel and defines the boundary between two tilted fault blocks. The western portion of the parcel is mapped as sedimentary rocks from the Mississippian, Devonian, and Cambrian.

## Biological and Water Resources

Vegetation on the parcel encompasses two biotic communities: Arizona Upland Subdivision of the Sonoran Desertscrub and Semi-desert Grassland. The western portion of the parcel includes both biotic communities, whereas the eastern portion is entirely grasslands. Commonly found plant species within the Dripping Springs Parcel include saguaro, paloverde, jojoba, velvet mesquite, desert hackberry, hopbush, brittlebush, cholla, and prickly pear cacti. Grassland species found include desert spoon, Palmer's agave, catclaw acacia, scrub live oak, beargrass, one-seed juniper, threeawn grasses, sideoats grama grass, black grama grass, curly mesquite grass, bullgrass, and broom snakeweed. Groupings of limestone endemics were also noted within the parcel including sandpaper bush, Mariola, crucifixion thorn, desert zinnia, and beebush. The xeric washes on the parcel support dense velvet mesquite and catclaw mimosa.

The 2016 ecological overview and more recent screening identified a number of other special status species with some potential to occur within the property (either under the ESA, BGEPA, or identified as a BLM sensitive species):

- ESA: western yellow-billed cuckoo (threatened); ocelot (endangered); jaguar (endangered); southwestern willow fly-catcher (endangered)
- BGEPA: bald eagle; golden eagle
- BLM Gila District sensitive species with known or potential occurrence: peregrine falcon; gilded flicker; monarch butterfly; pale Townsend's big-eared bat; greater western mastiff bat; Allen's lappet-browed or big-eared bat; lesser long-nosed bat; California leaf-nosed bat; cave myotis; Sonoran desert tortoise; pinyon jay; desert purple martin

No surface water features appear to be present within the Dripping Springs Parcel, with the exception of very minor ephemeral headwater drainage features that are tributary to the Gila River.

## Hazardous Materials

A Phase 1 environmental site assessment was completed for the property in June 2015, and identified no RECs on the property. Historical mine features were noted during the work, but while there is potential for these mine features to impact groundwater or produce acid mine drainage, no discoloration or distressed vegetation was noted around the existing features. In addition, potential for impacts on surface or groundwater by contact with mineralized rock is not considered likely.

## Cultural Resources

A Class III cultural resources inventory performed in 2016 identified four newly recorded archaeological sites, two of which were recommended for inclusion in the NRHP. These archaeological sites point to use by Native Americans, and Late Historic period Euro-American uses.

## Key Documents Describing Dripping Springs Parcel

- WestLand Resources Inc. 2015. "Phase I Site Assessment Non-Federal Parcel - Dripping Springs Gila County, Arizona." June 1, 2015 (WestLand Resources Inc. 2015a)

- WestLand Resources Inc. 2016. "A Cultural Resources Inventory of the 159.64-Acre Dripping Spring Parcel, Gila and Pinal Counties, Arizona." September 28, 2016 (Charest 2016a)
- WestLand Resources Inc. 2016. "Ecological Overview Dripping Springs Parcel Gila and Pinal Counties, Arizona: Resolution Copper." December 1, 2016 (WestLand Resources Inc. 2016a)

## *Town of Superior Lands*

### PARCEL DESCRIPTION

If requested by the Town of Superior, Section 3003 additionally authorizes and directs the transfer of 545 acres of NFS lands to the Town of Superior (figure B-17). At this time, the Town of Superior has not requested the transfer.

Figure B-17. Photograph of Town of Superior parcel

The Forest Service–administered lands to be conveyed to the Town of Superior include a 30-acre parcel known as Fairview Cemetery and 250 acres contained in four parcels known as the Superior Airport Contiguous Parcels. In addition, the Town of Superior lands include a Federal reversionary interest to a 265-acre Superior Airport parcel. The Superior Airport parcel was originally owned by the Federal Government, then deeded to Pinal County, and subsequently conveyed to the Town of Superior with the condition that it could only be used as an airstrip. Any other use would cause the property to revert to Federal land (the reversionary interest). As part of the land exchange, the Federal reversionary interest would be removed, after which time the parcel could be used for non-airport purposes.

## Wildlife Species Occurrence on Offered Lands

The following tables contain analysis of which special status species occur on lands managed by either Tonto National Forest (see table B-2), Coconino National Forest (see table B-3), or BLM (see table B-4). Each of these administrative jurisdictions has a separate list of species that are considered to have special status.

## Plant Species Occurrence on Offered Lands

Special status plants also occur on the various parcels and are listed in table B-5. Each of these administrative jurisdictions has a separate list of species that are considered to have special status. The jurisdictions are also concerned with noxious weeds and their presence for management goals. The likelihood of occurrence for the noxious and invasive weeds are shown in table B-6.

## Table B-2. Special status wildlife species for offered lands under Tonto National Forest jurisdiction

Unless otherwise noted, range or habitat information is from the following sources: Arizona Heritage Data Management System (Arizona Game and Fish Department 2018a); USFWS Arizona Ecological Services Field Office (U.S. Fish and Wildlife Service 2016b); Tonto National Forest Final Assessment (U.S. Forest Service 2017d); Tonto National Forest Threatened, Endangered and Sensitive Species Abstracts (Tonto National Forest 2000); NatureServe (NatureServe 2018); Reptiles and Amphibians of Arizona (Brennan 2008); eBird (2018)

| **Common Name (*Scientific Name*)** | **Status*** | **HDMS Records within 2 miles** | **Baseline Data Records** | **Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona)** | **Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)** | **Geographical Range in Arizona** | **Likelihood of Occurrence in Offered Lands Parcels** |
|---|---|---|---|---|---|---|---|
| **Amphibians** | | | | | | | |
| Western barking frog (*Craugastor augusti cactorum*) | TNF: S | No | No | No | Species prefers outcrops or cave on rocky slopes in oak/pine-oak associations; elevational range of 4,200–6,200 feet above mean sea level (amsl) | Occurs in rocky outcrops in Cochise and southern Pima and Santa Cruz Counties, in the Quinlan, Santa Rita, Patagonia, Huachuca, and Pajarito mountain ranges | Unlikely to occur |
| Chiricahua leopard frog (*Lithobates chiricahuensis*) | ESA: T (Gila, Pinal, Yavapai Counties) | No | No | No | Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281–8,890 feet. | Occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona | Possible site: Turkey Creek |
| Northern leopard frog (*Lithobates pipiens*) | TNF: S | No | No | No | Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl | Found in northern and central Arizona | Unlikely to occur |
| Lowland leopard frog (*Lithobates yavapaiensis*) | TNF: S | No | No | No | Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and human-made | Occurs in central and southeastern Arizona | Possible sites: Apache Leap, Cave Creek, Tangle Creek, Turkey Creek |
| **Birds** | | | | | | | |
| Northern goshawk (*Accipiter gentilis*) | TNF: S | Yes, Turkey Creek | No | No | Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9,120 feet amsl | Occurs throughout Arizona | Possible site: Turkey Creek |
| Golden eagle (*Aquila chrysaetos*) | BGEPA: Yes | No | Yes, Apache Leap (WestLand Resources Inc. 2017c) | eBird | Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl | Occurs throughout Arizona | Known site: Cave Creek; possible sites: Apache Leap, Tangle Creek, Turkey Creek |
| Western yellow-billed cuckoo (DPS) (*Coccyzus americanus*) | ESA: T (All Arizona counties) | Yes, Apache Leap, Tangle Creek | No | eBird | Typically found in riparian woodland vegetation (cottonwood [*Populus* spp.], willow [*Salix* spp.], or saltcedar [*Tamarix* spp.) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection. | Occurs throughout Arizona | Known site: Cave Creek; possible sites: Tangle Creek, Turkey Creek, |
| Southwestern willow flycatcher (*Empidonax traillii extimus*) | ESA: E (All counties except Navajo County) | No | No | No | Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (*Populus* spp.), willow (*Salix* spp.), boxelder (*Acer negundo*), saltcedar (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus* spp.), and arrowweed (*Pluchea sericea*) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl. | Occurs throughout Arizona | Possible sites: Cave Creek, Tangle Creek, Turkey Creek |
| American peregrine falcon (*Falco peregrinus anatum*) | TNF: S | No | Yes, Apache Leap South (WestLand Resources Inc. 2017c) | eBird: Cave Creek, Apache Leap | Species is found near cliffs overlooking habitats that support large numbers of birds; elevational range from 400–9,000 feet amsl | Occurs throughout Arizona | Known sites: Cave Creek, Apache Leap; possible sites: Tangle Creek, Turkey Creek |
| Yellow-eyed junco (*Junco phaeonotus*) | TNF: S | No | No | No | Habitat consists of open coniferous forest and pine-oak associations | Occurs in central and southeastern Arizona | Unlikely to occur |
| Sulphur-bellied flycatcher (*Myiodynastes luteiventris*) | TNF: S | No | No | No | Preferred habitat includes sycamore-walnut canyons; species only present during breeding season | Occurs in southeast and central Arizona | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands Parcels |
|---|---|---|---|---|---|---|---|
| Yuma Ridgeway's rail (*Rallus longirostris yumanensis*) | ESA: E (Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties) | No | No | No | In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (*Typha* spp.), bulrushes (*Isolepis* spp.), and sedges (*Carex* spp.). | Occurs in western and central Arizona | Unlikely to occur |
| Mexican spotted owl (*Strix occidentalis lucida*) | ESA: T (All counties except La Paz and Yuma Counties) | No | No | No | Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine–Gambel oak. Nests in live trees on natural platforms (e.g., dwarf mistletoe [*Arceuthobium* spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl. | Occurs throughout Arizona, except La Paz and Yuma Counties | Possible site: Turkey Creek |
| **Fish** | | | | | | | |
| Desert sucker (*Catostomus clarki*) | TNF: S | Yes, Apache Leap, Cave Creek, Tangle Creek, Turkey Creek | No | No | Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl | Occurs in central, southern, and southeastern Arizona | Possible sites: Tangle Creek, Turkey Creek |
| Sonora sucker (*Catostomus insignis*) | TNF: S | Yes, Apache Leap, Cave Creek, Tangle Creek, Turkey Creek | No | No | Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl | Occurs in central, southern, and southeastern Arizona | Possible sites: Turkey Creek |
| Desert pupfish (*Cyprinodon macularius*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties) | No | No | No | Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 feet amsl | Occurs in Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties | Unlikely to occur |
| Gila chub (*Gila intermedia*) | ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties) | No | No | No | Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations between 2,720 and 5,420 feet amsl. | Occurs in Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties | Possible sites: Tangle Creek, Turkey Creek |
| Headwater chub (*Gila nigra*) | TNF: S | No | No | No | Species is found in the middle to headwater reaches of medium-sized streams with large pools and cover; elevational range of 92–2,000 feet amsl | Occurs in Gila, Graham, and Yavapai Counties | Possible sites: Tangle Creek, Turkey Creek |
| Roundtail chub (*Gila robusta*) | TNF: S | No | No | No | Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl | Occurs in Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, and Yavapai Counties | Possible sites: Tangle Creek, Turkey Creek |
| Spikedace (*Meda fulgida*) | ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties) | No | No | No | Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl. | Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties | Possible sites: Tangle Creek, Turkey Creek |
| Gila topminnow (incl. Yaqui) (*Poeciliopsis occidentalis*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties) | No | No | No | Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover | Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties | Unlikely to occur |
| Colorado pikeminnow (*Ptychocheilus lucius*) | ESA: E (Gila, Maricopa, and Yavapai Counties) | No | No | No | Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl. | Occurs in Gila, Maricopa, and Yavapai Counties | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands Parcels |
|---|---|---|---|---|---|---|---|
| Loach minnow (*Tiaroga cobitis*) | ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties) | No | No | No | Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl | Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties | Unlikely to occur |
| Razorback sucker (*Xyrauchen texanus*) | ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties) | No | No | No | Found in backwaters, flooded bottomlands, pools, side channels, and other slower moving habitats at elevations below 6,000 feet amsl | Occurs in Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties | Unlikely to occur |
| **Invertebrates** | | | | | | | |
| Netwing midge (*Agathon arizonicus*) | TNF: S | No | No | No | Confined to areas in the immediate vicinity of rapidly flowing streams | Occurs in Gila County in Arizona | Unlikely to occur |
| Parker's cylloepus riffle beetle (*Cylloepus parkeri*) | TNF: S | No | No | No | Habitat consists of small, rocky streams | Occurs in Yavapai County, Arizona | Possible sites: Cave Creek, Tangle Creek |
| A mayfly (*Fallceon eatoni*) | TNF: S | No | No | No | | Occurs in Gila County, Arizona | Unlikely to occur |
| Fossil springsnail (*Pyrgulopsis simplex*) | TNF: S | No | No | No | Habitat is only present at headsprings and upper section of the outflow, generally found on rocks or aquatic macrophytes in moderate current | Occurs in Gila and Yavapai Counties, Arizona | Unlikely to occur |
| A caddisfly (*Wormaldia planae*) | TNF: S | No | No | No | | Occurs in Gila and Yavapai Counties | Unlikely to occur |
| **Mammals** | | | | | | | |
| Sonoran pronghorn (*Antilocapra americana sonoriensis*) | ESA: ENE (La Paz, Maricopa, Pima, Pinal, Santa Cruz and Yuma Counties) | No | No | No | Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote (*Larrea tridentata*)–bursage (*Ambrosia* spp.) and palo verde–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl. | Occurs in southwestern Arizona | Unlikely to occur |
| Mexican gray wolf (*Canis lupus baileyi*) | ESA: E (Apache and Greenlee Counties) | No | No | No | Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000–12,000 feet amsl. | Occurs in Apache and Greenlee Counties, reintroductions are occurring in Apache County. All packs are currently located on the Apache-Sitgreaves National Forests (AGFD 2018a). | Unlikely to occur |
| Pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*) | TNF: S | Yes, Apache Leap, Cave Creek, Tangle Creek, Turkey Creek | No | No | In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes, and mines in higher elevations than summer | Occurs throughout Arizona | Possible sites: Apache Leap, Cave Creek, Tangle Creek, Turkey Creek |
| Spotted bat (*Euderma maculatum*) | TNF: S | No | No | No | Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl | Occurs in Yuma and Maricopa Counties, and eastern Arizona | Possible sites: Apache Leap, Cave Creek, Tangle Creek, Turkey Creek |
| Allen's lappet-browed or big-eared bat (*Idionycteris phyllotis*) | TNF: S | No | No | No | Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl | Occurs throughout Arizona except for deserts in southwestern Arizona | Possible sites: Apache Leap, Cave Creek, Tangle Creek, Turkey Creek |
| Western red bat (*Lasiurus blossevillii*) | TNF: S | No | No | No | Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl | Occurs south-central to southern and southeastern Arizona | Possible sites: Apache Leap, Cave Creek, Tangle Creek, Turkey Creek |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands Parcels |
|---|---|---|---|---|---|---|---|
| Ocelot (*Leopardus [Felis] pardalis*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties) | No | No | No | In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. The critical habitat component is probably dense cover near the ground and complete avoidance of open country. | Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties | Unlikely to occur |
| Jaguar (*Panthera once*) | ESA: E (Cochise, Pima, and Santa Cruz Counties) | No | No | No | Variety of habitats, prefers lowland wet habitats but also occurs in drier habitats such as oak-pine woodlands; elevational range of sightings in Arizona were from 5,200–5,700 feet amsl | Occurs in Cochise, Pima, and Santa Cruz Counties | Unlikely to occur |
| **Reptiles** | | | | | | | |
| Sonoran Desert tortoise (*Gopherus morafkai*) | TNF: S | No | No | No | Habitat includes Mojave desert scrub to semidesert grassland and interior chaparral; elevational range of 510–5,300 feet amsl | Occurs in the southern and southwest part of Arizona | Possible sites: Apache Leap, Cave Creek, Tangle Creek |
| Northern Mexican gartersnake (*Thamnophis eques megalops*) | ESA: T (All counties except Maricopa and Yuma Counties) | No | No | No | Species prefers cienegas, streams and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl | Occurs throughout Arizona except Maricopa and Yuma Counties | Possible site: Turkey Creek |
| Narrow-headed gartersnake (*Thamnophis rufipunctatus*) | ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties) | No | No | No | Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs permanent water source | Occurs in Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties | Possible site: Turkey Creek |
| Bezy's night lizard (*Xantusia bezyi*) | TNF: S | No | No | No | Species prefers rocky slopes in upland Sonoran desertscrub and chaparral vegetation types; elevational range of 2,400–5,800 feet amsl | Occurs in Gila, Pinal, and Maricopa Counties | Possible site: Apache Leap |

*Status Definitions

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

Tonto National Forest (TNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Bald and Golden Eagle Protection Act (BGEPA):

Yes = A species protected by a United States Federal statute that protects two species of eagle.

## Table B-3. Special status wildlife species for offered lands under Coconino National Forest jurisdiction

Unless otherwise noted, range or habitat information is from the following sources: Arizona Heritage Data Management System (Arizona Game and Fish Department 2018a); USFWS Arizona Ecological Services Field Office (U.S. Fish and Wildlife Service 2016b); Tonto National Forest Final Assessment (U.S. Forest Service 2017d); Tonto National Forest Threatened, Endangered and Sensitive Species Abstracts (Tonto National Forest 2000); NatureServe (NatureServe 2018); Reptiles and Amphibians of Arizona (Brennan 2008); eBird (2018)

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands |
|---|---|---|---|---|---|---|---|
| **Amphibians** | | | | | | | |
| Arizona toad (*Anaxyrus microscaphus*) | CNF: S | Yes | No | Reptiles of Arizona | Species prefers rocky stream and canyons in pine-oak associations and in lower deserts. Elevation ranges from sea level to 8,000 feet above mean sea level (amsl) | Found in canyons and floodplains south of the Mogollon Rim | Known to occur: East Clear Creek |
| Chiricahua leopard frog (*Lithobates chiricahuensis*) | ESA: T (All Arizona counties except La Paz, Mohave, Pinal, Yuma) | Yes | No | No | Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281–8,890 feet amsl. | Species occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona | Known to occur: East Clear Creek |
| Northern leopard frog (*Lithobates pipiens*) | CNF: S | Yes | No | Reptiles of Arizona | Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl | Found in northern and central Arizona | Known to occur: East Clear Creek |
| Lowland leopard frog (*Lithobates yavapaiensis*) | CNF: S | No | No | No | Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and human-made | Species occurs in central and southeastern Arizona | Unlikely to occur |
| **Birds** | | | | | | | |
| Northern goshawk (*Accipiter gentilis*) | CNF: S | Yes | Yes (WestLand Resources Inc. 2017c) | eBird | Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9,120 feet amsl | Species is found statewide in tall, forested mountains | Known to occur: East Clear Creek |
| Clark's grebe (*Aechmophorus clarkii*) | CNF: S | No | No | No | Requires large, deep bodies of water for fishing | Species is present on large reservoirs and along the Colorado River | Unlikely to occur |
| Golden eagle (*Aquila chrysaetos*) | BGEPA: Yes | No | No | No | Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl | Species is found throughout Arizona | Possible to occur: East Clear Creek |
| Western burrowing owl (*Athene cunicularia hypugaea*) | CNF: S | No | No | No | Species is found in open, dry grasslands, deserts, and agricultural lands; elevation ranges from 650–6,140 feet amsl | Species is found in southern Arizona and in agricultural areas in Maricopa and Pinal Counties | Unlikely to occur |
| Ferruginous hawk (*Buteo regalis*) | CNF: S | No | No | No | Species is found in open grasslands, scrublands, and woodlands in winter; ranges in elevation from 3,500 to 6,000 feet amsl | Species is found throughout the state in winter, breeds on Colorado Plateau | Unlikely to occur |
| Common black hawk (*Buteogallus anthracinus*) | CNF: S | Yes | No | eBird | Species only present during breeding season; riparian obligate found along streams between 1,750–7,080 feet amsl | Breeding range is along streams draining the Mogollon Rim; species can be found throughout the state during migration | Known to occur: East Clear Creek |
| Western yellow-billed cuckoo (DPS) (*Coccyzus americanus occidentalis*) | ESA: T (all Arizona counties) CNF: S | No | No | No | Typically found in riparian woodland vegetation—cottonwood (*Populus* spp.), willow (*Salix* spp.), or saltcedar (*Tamarix* spp.)—at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection. | Species occurs at its highest concentrations in Arizona are along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and Cienega and Sonoita Creeks. | Unlikely to occur |
| Southwestern willow flycatcher (*Empidonax traillii extimus*) | ESA: E (all Arizona counties except Navajo County) | No | No | No | Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (*Populus* spp.), willow (*Salix* spp.), boxelder (*Acer negundo*), saltcedar (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus* spp.), and arrowweed (*Pluchea sericea*) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl. | Species breeds very locally along the middle Gila, Salt, Verde, middle to lower San Pedro, and upper San Francisco Rivers; also, locally around Colorado River near the mouth of the Little Colorado River, the headwaters of the Little Colorado and locations south of Yuma; species can be found in a variety of habitat types during migration | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands |
|---|---|---|---|---|---|---|---|
| American peregrine falcon (*Falco peregrinus anatum*) | CNF: S | Yes | (WestLand Resources Inc. 2017c) | No | Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl | Species breeds throughout state only on cliffs near abundant prey items | Known to occur: East Clear Creek |
| California condor (*Gymnogyps californianus*) | ESA: ENE (Apache, Coconino, Mohave, Navajo and Yavapai Counties) | No | No | No | Roosts and nest in steep terrain with rock outcroppings, cliffs, and caves. High perches are necessary to create the strong updrafts the bird requires to lift into flight, and open grasslands or savannahs are essential for searching for food | Occurs mostly along the Grand Canyon and Kaibab Plateau in northern Arizona | Unlikely to occur |
| Bald eagle (*Haliaeetus leucocephalus*) | CNF: S<br>BGEPA: Yes | Yes | (WestLand Resources Inc. 2017c) | eBird | Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting | Found throughout much of the central and northern parts of Arizona, near large bodies of water | Known to occur: East Clear Creek |
| Abert's towhee (*Melozone aberti*) | CNF: S | No | No | No | Habitat includes woodlands and thickets usually near water, occurs in riparian woods, exotic vegetation such as salt cedar, along agricultural fields and in suburban areas | Species is found in lower elevation areas of central, southern and western Arizona | Unlikely to occur |
| Mexican spotted owl (*Strix occidentalis lucida*) | ESA: T (All counties except La Paz and Yuma Counties) | Yes | (WestLand Resources Inc. 2017c) | No | Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (*Pinus ponderosa*)–Gambel oak (*Quercus gambelii*). Nests in live trees on natural platforms (e.g., dwarf mistletoe [*Arceuthobium* spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl. | Found throughout the state in summer in forested mountains with steep canyons; found in almost all counties of Arizona; recently species has been found wintering in lower riparian areas such as Tonto Creek and Sabino Canyon | Known to occur: East Clear Creek |
| **Fish** | | | | | | | |
| Longfin dace (*Agosia chrysogaster*) | CNF: S | No | No | No | Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium- to small-sized streams with sandy/gravely bottoms and pools with some cover. Species is normally found below 4,900 feet amsl. | Occurs in central, southern, and southeastern Arizona | Unlikely to occur |
| California floater (*Anodonta californiensis*) | CNF: S | Yes | No | No | Species prefers shallow areas, less than 2 meters deep in unpolluted lakes, reservoirs, and perennial streams with relatively stable water levels of low velocity flow regimes; elevational range of 4,000–8,670 feet amsl | Occurs in Apache and Greenlee Counties, found in the Black River part of the Gila River Basin System | Known to occur: East Clear Creek |
| Desert sucker (*Catostomus clarki*) | CNF: S | No | No | No | Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl | Found throughout the Gila River basin and in tributaries to the Bill Williams River | Possible to occur: East Clear Creek |
| Bluehead sucker (*Catostomus discobolus discobolus*) | CNF: S | No | No | No | Species occurs in a variety of habitats from small streams to large rivers ranging from cold clear streams to warm, turbid rivers; elevational range of 2,001-6,759 feet amsl | Occurs in the Colorado River mainstem and Grand Canyon tributaries | Unlikely to occur |
| Sonora sucker (*Catostomus insignis*) | CNF: S | No | No | No | Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl | Found in the Gila and Bill Williams river basins | Possible to occur: East Clear Creek |
| Little Colorado sucker (*Catostomus* sp.) | CNF: S | Yes | (WestLand Resources Inc. 2017c) | No | Species prefers creeks, small to medium rivers and impoundments most often with abundant cover; elevational range of 2,200–7,100 feet amsl | Species is endemic to the upper portion of the Little Colorado River and some of its north-flowing tributaries | Known to occur: East Clear Creek |
| Gila chub (*Gila intermedia*) | ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties) | No | No | No | Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations below 2,720 and 5,420 feet amsl. | Currently found in the following drainages: Santa Cruz River, Middle Gila River, San Pedro River, Agua Fria River and Verde River | Possible to occur: East Clear Creek |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands |
|---|---|---|---|---|---|---|---|
| Headwater chub (*Gila nigra*) | CNF: S | No | No | No | Species is found in the middle to headwater reaches of medium-sized streams with large pools and cover; elevational range of 925–2,000 feet amsl | Current range includes streams in the Verde River basin, Tonto Creek subbasin and San Carlos River basin in Yavapai, Gila and Graham Counties | Unlikely to occur |
| Roundtail chub (*Gila robusta*) | CNF: S | No | (WestLand Resources Inc. 2017c) | No | Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl. | Occurs in tributaries to the Little Colorado River, tributaries to the Bill Williams River basin, the Salt River and its tributaries, the Verde River and its tributaries, Aravaipa Creek and Eagle Creek | Known to occur: East Clear Creek |
| Little Colorado spinedace (*Lepidomeda vittata*) | ESA: T (Apache, Coconino, and Navajo Counties) | Yes | (WestLand Resources Inc. 2017c) | No | Habitat consists of medium to small streams and is characteristically found in pools with water flowing over fine gravel and silt-mud substrates; elevational range of 4,000–8,000 feet amsl | Found in East Clear Creek and its tributaries, Chevelon and Silver Creeks, and Nutrioso Creek and the Little Colorado River | Known to occur: East Clear Creek |
| Spikedace (*Meda fulgida*) | ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties) | No | No | No | Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl | In Arizona, populations are found in the middle Gila, and Verde Rivers and Aravaipa and Eagle Creeks. | Unlikely to occur |
| Gila trout (*Oncorhynchus gilae gilae*) | ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties) | No | No | No | Species is found in small mountain headwater streams, which are generally narrow and shallow, and rarely exceed 70 degrees Fahrenheit. Siltation is usually low and cobble is the predominant substrate; Elevational range of 5,446-9,220 feet amsl. | Historically found in Verde and Agua Fria drainages. Species has been introduced to Gap Creek and Dude Creek, but those populations are in jeopardy or have been extirpated. Species could still be present in tributaries to the Verde River such as Oak Creek and West Clear Creek. | Unlikely to occur |
| Gila topminnow (*Poeciliopsis occidentalis occidentalis*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties) | No | No | No | Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover | In Arizona, most of the remaining native populations are in the Santa Cruz River system. | Unlikely to occur |
| Colorado pikeminnow (*Ptychocheilus lucius*) | ESA: E, ENE (Gila, Maricopa, and Yavapai Counties) | No | No | No | Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl. | Considered extirpated from the state, two experimental populations have been stocked into Salt and Verde River drainages | Unlikely to occur |
| Loach minnow (*Tiaroga cobitis*) | ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties) | No | No | No | Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl | Its range in Arizona is limited to reaches in the East Fork of the White River (Navajo County); Aravaipa, Deer, and Turkey Creeks (Graham and Pinal Counties); San Francisco and Blue Rivers; and Eagle, Campbell Blue, and Little Blue Creeks (Greenlee County). A population was discovered in the Black River in 1996. | Unlikely to occur |
| Razorback sucker (*Xyrauchen texanus*) | ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties) | No | No | No | Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl | In Arizona, populations are restricted to Lakes Mohave and Mead and the lower Colorado River below Havasu in the Lower Basin. In the Upper Basin, small remnant populations are found in the Green, Yampa, and main stem Colorado Rivers. | Unlikely to occur |
| **Invertebrates** | | | | | | | |
| A mayfly (*Homoleptohyphes quercus*) | CNF: S | No | No | No | Habitat is primarily lotic depositional, some lentic littoral. Larvae are common in flowing waters ranging from small streams to large rivers, but they occur in areas of slow current. Preferred substrates include silt, fine sand, gravel, woody debris, moss and other plant growth on stones, exposed roots of terrestrial plants, and at the base of rooted aquatic vegetation. | Occurs in Coconino and Pinal Counties | Possible to occur: East Clear Creek |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands |
|---|---|---|---|---|---|---|---|
| Four-spotted skipperling (*Piruna polingii*) | CNF: S | No | No | No | Habitat includes moist woodland openings with lush vegetation, meadows, ravines and streamsides in the mountains | Occurs from central Arizona south to Mexico | Possible to occur: East Clear Creek |
| Page springsnail (*Pyrgulopsis morrisoni*) | CNF: S | No | No | No | Occurs on firm substrates such as rocks, vegetation, floating algal mats and submerged woody debris in association with slow to moderate flows of head springs, seeps and lateral runs; elevational range of 3,300–3,600 feet amsl | Occurs in several springs along Oak Creek in the Bubbling Springs complex, the Page Springs complex, and on private land in the Verde Valley | Unlikely to occur |
| Fossil springsnail (*Pyrgulopsis simplex*) | CNF: S | No | No | No | Habitat is only present at headsprings and upper section of the outflow, generally found on rocks or aquatic macrophytes in moderate current | Occurs in Gila and Yavapai Counties, Arizona | Unlikely to occur |
| Nitocris fritillary (*Speyeria nokomis nitocris*) | CNF: S | No | No | No | Occurs in alpine meadows, the species' host plant is *Viola nephrophylla* | Occurs in eastern Arizona | Unlikely to occur |
| Nokomis fritillary (*Speyeria nokomis nokomis*) | CNF: S | No | No | No | Occurs in streamside meadows and open seepage areas with an abundance of violets in generally desert landscapes | Occurs in eastern Arizona | Unlikely to occur |
| **Mammals** | | | | | | | |
| Mexican gray wolf (*Canis lupus baileyi*) | ESA: E (Apache and Greenlee Counties) | No | No | No | Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000–12,000 feet amsl | Occurs in Apache and Greenlee Counties, reintroductions are occurring in Apache County. All packs are currently located on the Apache-Sitgreaves National Forest (AGFD 2018a). | Unlikely to occur |
| Pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*) | CNF: S | No | No | No | In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes, and mines in higher elevations than summer | Widespread, documented in almost all counties | Possible to occur: East Clear Creek |
| Spotted bat (*Euderma maculatum*) | CNF: S | No | No | No | Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl | Not well known, records from Yuma County, Maricopa County, Kaibab Plateau and some heard only records from eastern Arizona | Possible to occur: East Clear Creek |
| Greater western mastiff bat (*Eumops perotis californicus*) | CNF: S | No | No | No | Species prefers lower and upper Sonoran desertscrub near cliffs with lots of crevices; elevational range of 240–8,475 feet amsl | Year-round and widespread in the state | Possible to occur: East Clear Creek |
| Allen's lappet-browed or big-eared bat (*Idionycteris phyllotis*) | CNF: S | No | No | No | Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl | Widespread in Arizona except for deserts in southwestern Arizona, most records from southern Colorado Plateau, Mogollon Rim and adjacent mountain ranges | Possible to occur: East Clear Creek |
| Western red bat (*Lasiurus blossevillii*) | CNF: S | No | No | No | Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl | South-central to southern and southeastern Arizona, summer resident only; historic records from Sierra Ancha Mountains and Queen Creek | Possible to occur: East Clear Creek |
| Long-tailed vole (*Microtus longicaudus*) | CNF: S | No | No | No | Occurs in various habitats ranging from dense coniferous forests to rocky alpine tundra, sagebrush semidesert, moist meadows, marshes, and forest-edge habitat; elevational range of sea level to 11,975 feet amsl | Found in northern and central Arizona | Unlikely to occur |
| Navajo Mogollon vole (*Microtus mogollonensis navaho*) | CNF: S | No | No | No | Species prefers clear-cut pine flat that is growing back as grassland with scattered oaks, rocky slopes with open uncut ponderosa forest with openings, and pinyon juniper with scattered ponderosa pine stands | Occurs in Apache and Coconino Counties, in the Little Colorado headwaters, Canyon Diablo, Lower Little Colorado, and Upper Verde watersheds | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Records (eBird, SWCA, or Forest Service Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands |
|---|---|---|---|---|---|---|---|
| Black-footed ferret (*Mustela nigripes*) | ESA: ENE (Coconino and Yavapai Counties) | No | No | No | Occurs in arid prairies, characterized as Plains and Great Basin Grassland community; elevational range of 5,250–6,234 feet amsl | Species is reintroduced into the Aubrey Valley in Coconino County | Unlikely to occur |
| Wupatki Arizona pocket mouse (*Perognathus amplus cineris*) | CNF: S | No | No | No | Found in various types of desert scrub habitats and in some scrub oak habitats; elevational range of 3,900–5,420 feet amsl | Found only from Echo Cliffs in the north, south and east to the Colorado River and to the Little Colorado River, south of Wupatki National Monument | Unlikely to occur |
| Plains harvest mouse (*Reithrodontomys montanus*) | CNF: S | No | No | No | Occurs in well-developed grasslands in areas with less than 50 percent bare soil; elevational range of 275–6,300 feet amsl | Species occurs in southeastern Arizona | Unlikely to occur |
| Merriam's shrew (*Sorex merriami leucogenys*) | CNF: S | No | No | No | Sagebrush steppe | Northeastern Arizona | Unlikely to occur |
| Dwarf shrew (*Sorex nanus*) | CNF: S | No | No | No | Occupies numerous habitats including rocky areas in alpine tundra and partly into subalpine coniferous forest, other types of rocky slopes, sedge marsh, subalpine meadow, dry brushy slopes, arid shortgrass prairie, dry stubble fields, and pinyon-juniper woodland | Occurs along the Kaibab Plateau, San Francisco Peaks, and White Mountains | Unlikely to occur |
| **Reptiles** | | | | | | | |
| Reticulate Gila monster (*Heloderma suspectum suspectum*) | CNF: S | No | No | No | Occurs in Sonoran Desert and extreme western edge of Mohave Desert, less frequent in desert-grassland and rare in oak woodland; most common in undulating rocky foothills, bajadas, and canyons | Occurs in the western and southwestern portion of the state | Unlikely to occur |
| Northern Mexican gartersnake (*Thamnophis eques megalops*) | ESA: T (All counties except Maricopa and Yuma Counties) CNF: S | No | No | No | Species prefers cienegas, streams, and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl | Species is found along the Mogollon Rim and a few isolated populations in south-central Arizona | Unlikely to occur |
| Narrow-headed gartersnake (*Thamnophis rufipunctatus*) | ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties) CNF: S | No | No | No | Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs permanent water source | Species is found along the Mogollon Rim | Unlikely to occur |

* Status Definitions

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

Coconino National Forest (CNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Bald and Golden Eagle Protection Act (BGEPA):

Yes = A species protected by a United States Federal statute that protects two species of eagle.

## Table B-4. Special status wildlife species for offered lands under BLM jurisdiction

Unless otherwise noted, range or habitat information is from the following sources: Arizona Heritage Data Management System (Arizona Game and Fish Department 2018a); USFWS Arizona Ecological Services Field Office (U.S. Fish and Wildlife Service 2016b); Tonto National Forest Threatened, Endangered and Sensitive Species Abstracts (Tonto National Forest 2000); NatureServe (NatureServe 2018); Reptiles of Arizona (Brennan 2008); eBird (2018)

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Occurrence Records (eBird, SWCA or BLM Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in BLM Offered Lands |
|---|---|---|---|---|---|---|---|
| **Amphibians** | | | | | | | |
| Arizona toad (*Anaxyrus microscaphus*) | BLM: S | No | No | No | Species prefers rocky stream and canyons in pine-oak associations and in lower deserts; elevational range from sea level to 8,000 feet amsl | Found in canyons and floodplains south of the Mogollon Rim | Possible to occur: Dripping Springs |
| Sonoran green toad (*Anaxyrus retiformis*) | BLM: S | No | No | No | Species is found in rain pools, wash bottoms, and areas near water in semi-arid mesquite-grassland, creosote desert and upland saguaro-paloverde desert; elevational range of 500–3,225 feet amsl | Found in south-central Arizona, from Organ Pipe Cactus National Monument to 9 miles north of Pima/Pinal county line in Santa Rosa Valley | Unlikely to occur |
| Great Plains narrow-mouthed toad (*Gastrophryne olivacea*) | BLM: S | No | No | No | Found in mesquite semi-desert grassland to oak woodland near streams, springs, and rain pools; elevational range of sea level to 4,100 feet amsl | Found from Santa Cruz County north to Maricopa County and west to near Ajo, in Pima County | Unlikely to occur |
| Plains leopard frog (*Lithobates blairi*) | BLM: S | No | No | No | Found near stream, ponds, reservoirs, marshes, or irrigation ditches in prairies and desert grasslands; elevational range of 4,060–5,880 feet amsl | Isolated population located on the western side of the Chiricahua Mountains, Cochise County, Arizona | Unlikely to occur |
| Chiricahua leopard frog (*Lithobates chiricahuensis*) | ESA: T (All Arizona counties except La Paz, Mohave, Pinal, Yuma)<br>BLM: S | Yes, Appleton Ranch | No | Reptiles of Arizona | Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281–8,890 feet amsl. | Species occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona | Possible to occur: Appleton Ranch |
| Northern leopard frog (*Lithobates pipiens*) | BLM: S | No | No | No | Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl | Found in northern and central Arizona | Unlikely to occur |
| Lowland leopard frog (*Lithobates yavapaiensis*) | BLM: S | Yes, Dripping Springs, Lower San Pedro River | No | Reptiles of Arizona | Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and human-made | Species occurs in central and southeastern Arizona | Known to occur: Lower San Pedro River, Dripping Springs; possible site: Appleton Ranch |
| **Birds** | | | | | | | |
| Northern goshawk (*Accipiter gentilis*) | BLM: S | No | No | No | Species is found in wide variety of forest associations including deciduous, coniferous, and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9120 feet amsl | Species is found statewide in tall, forested mountains | Unlikely to occur |
| Arizona grasshopper sparrow (*Ammodramus savannarum ammolegus*) | BLM: S | Yes, Appleton Ranch, Dripping Springs | No | eBird: Appleton Ranch, Dripping Springs, Lower San Pedro River | Species preferred habitat is open grasslands with some shrubs between 3,800–5,300 feet amsl | Species is found in southern Arizona year-round | Known to occur: Appleton Ranch, Dripping Springs, Lower San Pedro River |
| Golden eagle (*Aquila chrysaetos*) | BLM: S<br>BGEPA: Yes | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | eBird: Appleton Ranch, Dripping Springs, Lower San Pedro River | Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl | Species is found throughout Arizona | Known to occur: Appleton Ranch, Dripping Springs, Lower San Pedro River |
| Western burrowing owl (*Athene cunicularia hypugaea*) | BLM: S | Yes, Appleton Ranch | No | eBird: Appleton Ranch | Species is found in open, dry grasslands, deserts, and agricultural lands; elevation ranges from 650–6,140 feet amsl | Species is found in southern Arizona and in agricultural areas in Maricopa and Pinal Counties | Known to occur: Appleton Ranch |
| Ferruginous hawk (*Buteo regalis*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | eBird: Appleton Ranch, Dripping Springs, Lower San Pedro River | Species is found in open grasslands, scrublands, and woodlands in winter; ranges in elevation from 3,500 to 6,000 feet amsl | Species is found throughout the state in winter, breeds on Colorado Plateau | Known to occur: Appleton Ranch, Dripping Springs, Lower San Pedro River |

| **Common Name (*Scientific Name*)** | **Status*** | **HDMS Records within 2 miles** | **Baseline Data Records** | **Other Occurrence Records (eBird, SWCA or BLM Site Visits, Reptiles of Arizona)** | **Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)** | **Geographical Range in Arizona** | **Likelihood of Occurrence in BLM Offered Lands** |
|---|---|---|---|---|---|---|---|
| Western yellow-billed cuckoo (DPS) (*Coccyzus americanus*) | ESA: T (all Arizona counties)<br>BLM: S | Yes, Appleton Ranch, Lower San Pedro River | Yes, Lower San Pedro River (Wilbor 2010) | eBird: Appleton Ranch, Lower San Pedro River | Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection. | Species occurs at its highest concentrations in Arizona along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and in Cienega and Sonoita Creeks. | Known to occur: Appleton Ranch, Lower San Pedro River |
| Gilded flicker (*Colaptes chrysoides*) | BLM: S | Yes, Dripping Springs, Lower San Pedro River | No | eBird: Appleton Ranch, Lower San Pedro River | Habitat includes stands of large saguaros, Joshua trees, and low-elevation riparian groves | Species is restricted to the Sonoran Desert | Known to occur: Appleton Ranch, Lower San Pedro River; possible site: Dripping Springs |
| Southwestern willow flycatcher (*Empidonax traillii extimus*) | ESA: E (all Arizona counties except Navajo County)<br>BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | eBird: Lower San Pedro River | Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (*Populus* spp.), willow (*Salix* spp.), boxelder (*Acer negundo*), saltcedar (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus* spp.), and arrowweed (*Pluchea sericea*) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl. | Species breeds very locally along the middle Gila, Salt, Verde, middle to lower San Pedro, and upper San Francisco Rivers; also, locally around Colorado River near the mouth of the Little Colorado River, the headwaters of the Little Colorado and locations south of Yuma; species can be found in a variety of habitat types during migration | Possible to occur: Lower San Pedro River |
| American peregrine falcon (*Falco peregrinus anatum*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | eBird: Appleton Ranch | Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl | Species breeds throughout state only on cliffs near abundant prey items | Known to occur: Appleton Ranch; possible sites: Lower San Pedro River, Dripping Springs |
| Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) | BLM: S | No | No | No | Species prefers streamside cottonwoods and willows near mesquite bosques; can also be found in dry washes with large mesquite, paloverde, ironwood, and saguaro | Occurs in Organ Pipe Cactus National Monument and suburban Tucson | Possible to occur: Lower San Pedro River |
| California condor (*Gymnogyps californianus*) | ESA: ENE (Apache, Coconino, Mohave, Navajo and Yavapai Counties)<br>BLM: S | No | No | No | Roosts and nest in steep terrain with rock outcroppings, cliffs, and caves. High perches are necessary to create the strong updrafts the bird requires to lift into flight, and open grasslands or savannahs are essential for searching for food | Occurs mostly along the Grand Canyon and Kaibab Plateau in northern Arizona | Unlikely to occur |
| Pinyon jay (*Gymnorhinus cyanocephalus*) | BLM: S | No | No | No | Habitat consists of pinyon-juniper woodland, sometimes found in pine forests and in scrub oak or sagebrush areas | Species is found along and above the Mogollon Rim in northern Arizona | Possible to occur: Dripping Springs |
| Bald eagle (*Haliaeetus leucocephalus*) | BLM: S<br>BGEPA: Yes | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting | Found throughout much of the central and northern parts of Arizona, near large bodies of water | Unlikely to occur |
| California black rail (*Laterallus jamaicensis coturniculus*) | BLM: S | No | No | No | Habitat in Arizona consists of shallow water habitat with emergent and shoreline vegetation. Prefers areas where water levels do not fluctuate. | Occurs only in southwestern part of state along the Colorado River in Yuma County | Unlikely to occur |
| Arizona Botteri's sparrow (*Peucaea botterii arizonae*) | BLM: S | Yes, Appleton Ranch | No | eBird: Appleton Ranch | Species is found in grasslands with scattered mesquite trees | Occurs in southeastern Arizona | Known to occur: Appleton Ranch |
| Desert purple martin (*Progne subis hesperia*) | BLM: S | Yes, Dripping Springs, Lower San Pedro River | No | eBird: Lower San Pedro River | Habitat consists of Sonoran Desert with many large saguaros proximal to water | Species is found in southern and central Arizona | Known to occur: Lower San Pedro River; possible site: Dripping Springs |
| Yuma Ridgeway's rail (*Rallus longirostris yumanensis*) | ESA: E (Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties)<br>BLM: S | No | No | No | In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (T*ypha* spp.), bulrushes (*Isolepis* spp.), and sedges (*Carex* spp.). | Range includes the Colorado River from Lake Mead to Mexico; the Gila and Salt Rivers upstream to the area of the Verde confluence; Picacho Reservoir; and the Tonto Creek arm of Roosevelt Lake. This species may be expanding into other suitable marsh habitats in western and central Arizona. | Unlikely to occur |
| California least tern (*Sternula antillarum browni*) | BLM: S | No | No | No | Habitat includes seacoasts, beaches, bays, estuaries, lagoons, lakes, and rivers | Species is rarely found in the state, one breeding record occurred in 2009 in Maricopa County but the species has not bred in the state since. | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Occurrence Records (eBird, SWCA or BLM Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in BLM Offered Lands |
|---|---|---|---|---|---|---|---|
| Mexican spotted owl (*Strix occidentalis lucida*) | ESA: T (All counties except La Paz and Yuma Counties)<br>BLM: S | Yes, Appleton Ranch | No | No | Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (*Pinus ponderosa*)–Gambel oak (*Quercus gambelii*). Nests in live trees on natural platforms (e.g., dwarf mistletoe [*Arceuthobium* spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl. | Found throughout the state in summer in forested mountains with steep canyons; found in almost all counties of Arizona; recently species has been found wintering in lower riparian areas such as Tonto Creek and Sabino Canyon | Unlikely to occur |
| Le Conte's thrasher (*Toxostoma lecontei*) | BLM: S | Yes, Dripping Springs | No | No | Flat, open saltbush deserts with a few scattered mesquites or creosote present | Species is found in the low deserts of southwestern Arizona | Unlikely to occur |
| **Fish** | | | | | | | |
| Gila longfin dace (*Agosia chrysogaster*) | BLM: S | Yes, Appleton Ranch, Lower San Pedro River | No | No | Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium- to small-sized streams with sandy/gravely bottoms and pools with some cover. Species is normally found below 4,900 feet amsl. | Occurs in central, southern, and southeastern Arizona | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Desert sucker (*Catostomus clarki*) | BLM: S | Yes, Appleton Ranch | No | No | Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl | Found throughout the Gila River basin and in tributaries to the Bill Williams River | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Sonora sucker (*Catostomus insignis*) | BLM: S | Yes, Appleton Ranch | No | No | Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl | Found in the Gila and Bill Williams river basins | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Desert pupfish (*Cyprinodon macularius*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties)<br>BLM: S | Yes, Appleton Ranch | Yes, Appleton Ranch (WestLand Resources Inc. 2004b) | No | Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 feet amsl | No natural populations remaining; populations were reintroduced at sites in Graham, Yavapai, and Santa Cruz Counties | Unlikely to occur |
| Gila chub (*Gila intermedia*) | ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties)<br>BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations below 2,720 and 5,420 feet amsl | Currently found in the following drainages: Santa Cruz River, Middle Gila River, San Pedro River, Agua Fria River, and Verde River | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Headwater chub (*Gila nigra*) | BLM: S | No | No | No | Species is found in the middle to headwater reaches of medium-sized streams with large pools and cover; elevational range of 925–2,000 feet amsl | Current range includes streams in the Verde River basin, Tonto Creek subbasin and San Carlos River basin in Yavapai, Gila, and Graham Counties | Unlikely to occur |
| Roundtail chub (*Gila robusta*) | BLM: S | No | No | No | Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl. | Occurs in tributaries to the Little Colorado River, tributaries to the Bill Williams River basin, the Salt River and its tributaries, the Verde River and its tributaries, Aravaipa Creek and Eagle Creek | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Little Colorado spinedace (*Lepidomeda vittata*) | ESA: T (Apache, Coconino and Navajo Counties)<br>BLM: S | No | No | No | Habitat consists of medium to small streams and is characteristically found in pools with water flowing over fine gravel and silt-mud substrates; elevational range of 4,000–8,000 feet amsl | Found in East Clear Creek and its tributaries, Chevelon and Silver Creeks, and Nutrioso Creek and the Little Colorado River | Unlikely to occur |
| Spikedace (*Meda fulgida*) | ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties)<br>BLM: S | No | No | No | Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl | In Arizona, populations are found in the middle Gila, and Verde Rivers and Aravaipa and Eagle Creeks. | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Occurrence Records (eBird, SWCA or BLM Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in BLM Offered Lands |
|---|---|---|---|---|---|---|---|
| Gila topminnow (incl. Yaqui) (*Poeciliopsis occidentalis*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties)<br>BLM: S | Yes, Appleton Ranch | No | No | Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover | In Arizona, most of the remaining native populations are in the Santa Cruz River system | Unlikely to occur |
| Colorado pikeminnow (*Ptychocheilus lucius*) | ESA: E, ENE (Gila, Maricopa, and Yavapai Counties) | No | No | No | Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast-flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl. | Considered extirpated from the state, two experimental populations have been stocked into Salt and Verde River drainages | Unlikely to occur |
| Speckled dace (*Rhinichthys ocsulus*) | BLM: S | No | No | No | Species prefers rocky areas of riffles, runs, pools, creeks, and small to medium rivers | Occurs in the Colorado, Bill Williams, and Gila River drainages | Possible to occur: Lower San Pedro River |
| Loach minnow (*Tiaroga cobitis*) | ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties)<br>BLM: S | No | No | No | Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl | Its range in Arizona is limited to reaches in the East Fork of the White River (Navajo County); Aravaipa, Deer, and Turkey Creeks (Graham and Pinal Counties); San Francisco and Blue Rivers; and Eagle, Campbell Blue, and Little Blue Creeks (Greenlee County). A population was discovered in the Black River in 1996. | Unlikely to occur |
| Razorback sucker (*Xyrauchen texanus*) | ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties)<br>BLM: S | No | No | No | Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl | In Arizona, populations are restricted to Lakes Mohave and Mead and the lower Colorado River below Havasu in the Lower Basin. In the Upper Basin, small remnant populations are found in the Green, Yampa, and main stem Colorado Rivers. | Unlikely to occur |
| **Invertebrates** | | | | | | | |
| Monarch butterfly (*Danaus plexippus* pop. 1) | BLM: S | No | No | No | Species present during spring and summer, rarely during winter at varying elevations around the state; prefers riparian habitats with milkweeds present | Species is present throughout the state | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Bylas springsnail (*Pyrgulopsis arizonae*) | BLM: S | No | No | No | Species is found in springs ranging from 26–32 degrees Celsius with submergent vegetation | Found in three springs along the Gila River between Bylas and Pima in Graham County, Arizona | Unlikely to occur |
| Sonoran talussnail (*Sonorella magdalenensis*) | BLM: S | No | No | No | Species prefers talus slopes of coarse broken rock; elevational range of 2,750–6,000 feet amsl | Occurs in Pima and Santa Cruz Counties, Arizona | Unlikely to occur |
| Arizona cave amphipod (*Stygobromus arizonensis*) | BLM: S | No | No | No | Species prefers aquatic habitat in subterranean caves and mines; found at elevations of 5,245 feet amsl | Found only at two locations in Cochise County, Arizona | Unlikely to occur |
| Gila tryonia (*Tryonia gilae*) | BLM: S | No | No | No | Species is found in mildly thermal springs with submergent vegetation; elevational range of 2,600–2,800 feet amsl | Found in an unnamed spring north of Bylas, also in Cold Springs and Porter Wash in Graham County, Arizona | Unlikely to occur |
| **Mammals** | | | | | | | |
| Sonoran pronghorn (*Antilocapra americana sonoriensis*) | ESA: ENE (La Paz, Maricopa, Pima, Pinal, Santa Cruz and Yuma Counties)<br>BLM: S | No | No | No | Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote (*Larrea tridentata*)–bursage (*Ambrosia* spp.) and palo verde–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl | The only extant U.S. population is in southwestern Arizona | Unlikely to occur |
| Mexican gray wolf (*Canis lupus baileyi*) | ESA: E (Apache and Greenlee Counties)<br>BLM: S | No | No | No | Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000–12,000 feet amsl. | Occurs in Apache and Greenlee Counties, reintroductions are occurring in Apache County. All packs are currently located on the Apache-Sitgreaves National Forests (AGFD 2018a). | Unlikely to occur |

| **Common Name (*Scientific Name*)** | **Status*** | **HDMS Records within 2 miles** | **Baseline Data Records** | **Other Occurrence Records (eBird, SWCA or BLM Site Visits, Reptiles of Arizona)** | **Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)** | **Geographical Range in Arizona** | **Likelihood of Occurrence in BLM Offered Lands** |
|---|---|---|---|---|---|---|---|
| Mexican long-tongued bat (*Choeronycteris mexicana*) | BLM: S | No | No | No | Habitat includes mesic areas in canyons of mixed oak-conifer forests in mountains rising from the desert. Roosts in daytime in caves, abandoned mines, and rockshelters; occasionally in palo verde-saguaro areas. Typically at elevations of 2,540–7,320 feet amsl. | Occurs in southeast Arizona from the Chiricahua Mountains west to the Baboquivari Mountains and as far north as the Santa Catalina Mountains. HDMS unpublished records from Pinal, Pima, Graham, Santa Cruz and Cochise Counties. | Possible to occur: Appleton Ranch |
| Pale Townsend's big-eared bat (*Corynorhinus townsendii*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes, and mines in higher elevations than summer. | Occurs throughout Arizona | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Gunnison's prairie dog (*Cynomys gunnisoni*) | BLM: S | No | No | No | Species prefers high mountain valleys and plateaus; elevational range of 6,000–12,000 feet amsl | Occurs in north-central and northeastern Arizona | Unlikely to occur |
| Black-tailed prairie dog (*Cynomys ludovicianus*) | BLM: S | Yes, Appleton Ranch | No | No | Habitat is dry, flat, open plains and desert grasslands; elevational range of 2,300–7,200 feet amsl | Occurs in southeast Arizona where they are reintroduced to the Las Cienegas National Conservation Area | Unlikely to occur |
| Banner-tailed kangaroo rat (*Dipodomys spectabilis*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Habitat is Great Basin desertscrub, desert grasslands with mesquite, junipers or shrubs; elevational range of 3,500–4,000 feet amsl | Occurs in Apache County | Unlikely to occur |
| Spotted bat (*Euderma maculatum*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl | Not well known, records from Yuma, Roll, Maricopa County, Kaibab Plateau, and some heard-only records from eastern Arizona | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Greater western mastiff bat (*Eumops perotis californicus*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Species prefers lower and upper Sonoran desertscrub near cliffs with lots of crevices; elevational range of 240–8,475 feet amsl | Occurs year-round and is widespread throughout the state | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Allen's lappet-browed or big-eared bat (*Idionycteris phyllotis*) | BLM: S | No | No | No | Found in ponderosa pine, pinyon-juniper, Mexican woodland, and riparian areas with cottonwoods, sycamores, and willows; also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl | Widespread in Arizona except for deserts in southwestern Arizona, most records from southern Colorado Plateau, Mogollon Rim, and adjacent mountain ranges | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Ocelot (*Leopardus* (*Felis*) *pardalis*) | ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties)<br>BLM: S | No | No | No | In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. The critical habitat component is probably dense cover near the ground and complete avoidance of open country. | In Arizona, there are five recent confirmed sightings of ocelot in Cochise County (2009), the Huachuca Mountains (2011 and 2012), one near Globe (2010), Santa Rita Mountains (2014), and unconfirmed sightings in the Chiricahua and Peloncillo Mountains. | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | Yes, Appleton Ranch (WestLand Resources Inc. 2004b) | Forage plants noted during site visits at Dripping Springs, Lower San Pedro River, and Appleton Ranch | Habitat consists of desert grasslands and shrublands in elevations ranging from 1,190–7,320 feet amsl; present only in summer | Species ranges from the Picacho Mountains south to the Agua Dulce Mountains, then east to the Chiricahua Mountains. Two records from the Phoenix area. | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| California leaf-nosed bat (*Macrotus californicus*) | BLM: S | Yes, Dripping Springs, Lower San Pedro River | No | No | Species prefers Sonoran desertscrub, roosts in mines, caves and rockshelters that have large areas of ceiling and flying space; elevational range of 160–3,980 feet amsl | Typically found south of the Colorado Plateau, year-round resident | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Arizona myotis (*Myotis occultus*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Found in ponderosa pine and oak-pine woodlands near water, can also be found in riparian forests along the lower Colorado and Verde rivers; elevational ranges of 150–1,000 feet amsl (lower Colorado River) and 3,200–8,620 feet amsl | Found in higher elevations of central and eastern counties of Arizona as well as the lower Colorado River Valley | Possible to occur: Appleton Ranch, Lower San Pedro, Dripping Springs |
| Cave myotis (*Myotis velifer*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | No | Habitat consist of creosote, brittlebush, palo verde, and cacti; roosts in caves, tunnels, mineshafts, under bridges and sometimes in buildings. Elevational range of 300–5,000 feet amsl. | Range is south of the Mogollon Plateau to Mexico, mostly summer resident except for a few that winter in southeastern Arizona | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Occurrence Records (eBird, SWCA or BLM Site Visits, Reptiles of Arizona) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in BLM Offered Lands |
|---|---|---|---|---|---|---|---|
| Jaguar (*Panthera onca*) | ESA: E (Cochise, Pima, and Santa Cruz Counties)<br>BLM: S | No | No | No | Variety of habitats, prefers lowland wet habitats but also occurs in drier habitats such as oak-pine woodlands; elevational range of sightings in Arizona were from 5,200–5,700 feet amsl | All documented sightings have been from southeastern Arizona | Possible to occur: Appleton Ranch, Lower San Pedro River |
| **Reptiles** | | | | | | | |
| Arizona striped whiptail (*Aspidoscelis arizonae*) | BLM: S | No | Yes, Appleton Ranch (Cogan 2012) | Reptiles of Arizona | Species prefers Semi-desert Grasslands in low valleys and sandy flats | Species only occurs near Willcox in Cochise County and in Whitlock Valley, Graham County | Unlikely to occur |
| New Mexico ridge-nosed rattlesnake (*Crotalus willardi obscurus*) | ESA: T (Cochise County)<br>BLM: S | No | No | No | Habitat includes rocks, bunchgrass, and leaf litter in steep rocky canyons in the pine-oak and pine-fir belts at elevations of 5,600–9,000 feet amsl | Occurs only in the Pelloncillo Mountains of Cochise County | Unlikely to occur |
| Sonoran Desert tortoise (*Gopherus morafkai*) | BLM: S | Yes, Dripping Springs, Lower San Pedro River | No | Reptiles of Arizona | Habitat includes Mojave desert scrub to semidesert grassland and interior chaparral; elevational range of 510–5,300 feet amsl | Species occurs across much of the southern and southwest part of the state, ranging from Kingman to Yuma to Tucson | Possible to occur: Appleton Ranch, Lower San Pedro River, Dripping Springs |
| Sonora mud turtle (*Kinosternon sonoriense sonoriense*) | BLM: S | Yes, Appleton Ranch, Dripping Springs, Lower San Pedro River | No | Reptiles of Arizona | Species prefers rocky stream, creeks, rivers, ponds, cattle tanks, and ditches in habitats ranging from Sonoran desertscrub to woodlands; elevational range of sea level to 6,500 feet amsl | Occurs in southeastern Arizona and along and below the Mogollon Rim | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Slevin's bunchgrass lizard (*Sceloporus slevini*) | BLM: S | Yes, Appleton Ranch | Yes, Appleton Ranch (Cogan 2012) | Reptiles of Arizona | Species prefers coniferous forests around bunchgrass in open sunny areas; elevational range of 4,300–9,480 feet amsl | Found only in the mountains of extreme southeast Arizona | Possible to occur: Appleton Ranch |
| Desert massasauga (*Sistrurus catenatus edwardsii*) | BLM: S | No | No | No | Species prefers tobosa grasslands in sloping bajadas with surface rocks; elevational range of 4,400–4,700 feet amsl | Occurs in extreme southeastern Arizona in San Bernardino and Sulphur Springs Valley | Unlikely to occur |
| Desert ornate box turtle (*Terrapene ornata*) | BLM: S | No | No | Reptiles of Arizona | Species prefers low valleys, plains, and bajadas in semi-desert grassland and Chihuahuan desertscrub habitat types; elevational range of 2,000–7,100 feet amsl | Species is found in southeast Arizona, ranging as far north as Winkelman | Possible to occur: Appleton Ranch, Lower San Pedro River |
| Northern Mexican gartersnake (*Thamnophis eques megalops*) | ESA: T (All counties except Maricopa and Yuma Counties)<br>BLM: S | Yes, Appleton Ranch | Yes, Appleton Ranch (Cogan 2012) | Reptiles of Arizona | Species prefers cienegas, streams, and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl | Species is found along the Mogollon Rim and a few isolated populations in south-central Arizona | Possible to occur: Appleton Ranch |
| Narrow-headed gartersnake (*Thamnophis rufipunctatus*) | ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties)<br>BLM: S | No | No | No | Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs permanent water source | Species is found along the Mogollon Rim | Unlikely to occur |

* Status Definitions

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

Bureau of Land Management (BLM):

S = Sensitive. Species that could easily become endangered or extinct in the state.

Bald and Golden Eagle Protection Act (BGEPA):

Yes = A species protected by a United States Federal statute that protects two species of eagle.

## Table B-5. Special status plant species analyzed for the offered lands parcels

Unless otherwise noted, range or habitat information is from the following sources: Arizona Heritage Data Management System (Arizona Game and Fish Department 2018a); USFWS Arizona Ecological Services Field Office (U.S. Fish and Wildlife Service 2016b); Tonto National Forest Final Assessment (U.S. Forest Service 2017d); Tonto National Forest Threatened, Endangered and Sensitive Species Abstracts (Tonto National Forest 2000); NatureServe (NatureServe 2018); Bureau of Land Management (Bureau of Land Management 2017b); Reptiles of Arizona (Brennan 2008); eBird (2018); (SEINet 2018)

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Occurrence Records (SEINet, NatureServe) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands Analysis Area |
|---|---|---|---|---|---|---|---|
| Acuna cactus (*Echinomastus erectocentrus* var. *acunensis*) | ESA: E (Maricopa, Pima, and Pinal Counties)<br>BLM: S | No | No | No | Occurs in valleys and on small knolls and gravel ridges of up to 30 percent slope in the Palo Verde-Saguaro Association of the Arizona Upland subdivision of the Sonoran Desert scrub. Elevation 1,190–3,773 feet amsl. | Found in Maricopa, western Pima, and Pinal Counties | Unlikely to occur |
| Alcove bog orchid (*Platanthera zothecina*) | CNF: S | No | No | No | Found at bases of alcove face-walls with flowing drip-line or with seepage down wall, shaded seeps, in dense vegetation or under rock debris, and in shaded sites along streams; elevation 3,950–6,400 feet amsl | Apache, Coconino, and Navajo Counties | Unlikely to occur |
| Aravaipa woodfern (*Thelypteris puberula* var. *sonorensis*) | TNF: S<br>BLM: S | No | No | No | Meadows and seeps, wetland-riparian | Coconino, Graham, Pima, Pinal, and Yavapai Counties | Unlikely to occur |
| Arizona bugbane (*Actaea arizonica*) | CNF: S<br>TNF: S | No | No | No | Mixed conifer and high-elevation riparian deciduous forests in deep shade and moist soils with high humus content, near perennial or intermittent streams or seeps, especially along bottoms and lower slopes of steep, narrow canyons; elevation 5,300–8,300 feet amsl | Coconino, Kaibab, and Tonto National Forests in central Arizona | Possible to occur: East Clear Creek |
| Arizona cliffrose (*Purshia subintegra*) | ESA: E (Graham, Maricopa, Mohave and Yavapai Counties) | No | No | No | Occurs at four widely separated areas across central Arizona, these sights differ slightly in elevation and associated vegetation. All sites have limestone soils derived from Tertiary lacustrine (lakebed) deposits. | Graham, Maricopa, Mohave, and Yavapai Counties | Unlikely to occur |
| Arizona eryngo (*Eryngium sparganophyllum*) | BLM: S | No | No | No | Riparian zones and marshes within pinyon-Juniper woodland and Madrean evergreen woodland. Elevation between 3,000–8,000+ feet amsl. | Cochise and Pima Counties | Unlikely to occur |
| Arizona hedgehog cactus (*Echinocereus triglochidiatus* var. *arizonicus*) | ESA: E (Maricopa, Pinal, and Gila Counties)<br>BLM: S | Yes, Apache Leap | No | No | Found on dacite or granite bedrock, open slopes, in narrow cracks, between boulders, and in the understory of shrubs in the ecotone between Madrean evergreen woodland and Interior Chaparral. Elevation 3,200–5,200 feet amsl. | In Gila and Pinal Counties of central Arizona. Exact locations are not provided because illegal collecting threatens the species. | Known to occur: Apache Leap South |
| Arizona leatherflower (*Clematis Hirsutissima* var. *arizonica*) | CNF: S | No | No | No | Limestone-derived soils within ponderosa pine and pinyon pine, and Rocky Mountain juniper communities | Apache and Coconino Counties | Unlikely to occur |
| Arizona phlox (*Phlox amabilis*) | CNF: S<br>TNF: S | No | No | Yes | Open, exposed, limestone-rocky slopes within pinyon-juniper woodlands and ponderosa pine-Gambel oak communities | Coconino, Gila, Graham, and Yavapai Counties | Possible to occur: Tangle Creek |
| Arizona rabbitbrush (*Chrysothamnus molestus*) | CNF: S | No | No | No | Rocky soils, mostly on limestone pinyon-juniper woodlands. Elevation between 5,905–7,875 feet amsl. | Only known from Coconino County. | Unlikely to occur |
| Arizona sneezeweed (*Helenium arizonicum*) | CNF: S | No | No | Yes | Roadsides and clearings in ponderosa forests and in regions of pine forests, especially around wet places such as bogs, ponds, lakes, and roadside ditches | Known almost exclusively from Coconino County, but also found in southern Apache, Gila, and possibly Navajo Counties | Possible to occur: East Clear Creek, Tangle Creek |
| Arizona Sonoran rosewood (*Vauquelinia californica* ssp. *sonorensis*) | BLM: S | No | No | Yes | Woodland or forest at base of cliffs, along canyon bottoms and on moderate to steep slopes of the Ajo Mountains. Elevation 2,300–4,800 feet amsl. | Cochise, Gila, Maricopa, Pima, and Pinal Counties | Known to occur: Apache Leap South |
| Arizona sunflower (*Helianthus arizonensis*) | CNF: S | No | No | No | Open pine woodlands. Elevation 3,935–6,885 feet amsl. | Apache, Coconino, Navajo, and Yavapai Counties | Unlikely to occur |
| Bartram stonecrop (*Graptopetalum bartramii*) | BLM: S | No | No | No | Sky island species growing on rocky outcrops along arroyos and canyons, often in shade and litter with Madrean evergreen woodland. Elevation 3,900–6,700 feet amsl. | Cochise, Pima, and Santa Cruz Counties | Unlikely to occur |

| **Common Name (*Scientific Name*)** | **Status*** | **HDMS Records within 2 miles** | **Baseline Data Records** | **Other Occurrence Records (SEINet, NatureServe)** | **Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)** | **Geographical Range in Arizona** | **Likelihood of Occurrence in Offered Lands Analysis Area** |
|---|---|---|---|---|---|---|---|
| Bebb's willow (*Salix bebbiana*) | CNF: S | No | No | No | Along stream channels, on the edges of drainages, along seeps, and in perched sites that appear to be receiving little water | Apache, Coconino, Navajo, and Yavapai Counties | Unlikely to occur |
| Blumer's dock (*Rumex orthoneurus*) | CNF: S<br>TNF: S | No | No | Yes | Near perennial springs in unshaded meadows or along stream sides in canyons. In organic, moist soils. Elevation 6,490–9,030 feet amsl. | Apache, Coconino, Cochise, Gila, and Graham Counties | Known to occur: East Clear Creek |
| Chihuahua breadroot aka scurfpea (*Pediomelum pentaphyllum*) | BLM: S | No | No | No | Sandy, loamy soils | Cochise and Graham Counties | Unlikely to occur |
| Chihuahuan sedge (*Carex chihuahuensis*) | TNF: S | No | No | No | Stream banks, springs, and seeps. Elevation 1,100–8,000 feet amsl. | Cochise, Gila, Graham, Pima, and Santa Cruz Counties. Tonto National Forest: only found along Reynolds Creek. | Unlikely to occur |
| Chiricahua Mountain alumroot (*Heuchera glomerulata*) | TNF: S | No | No | No | Found on north-facing shaded rocky slopes, near seeps, springs and riparian areas, often in humus soil. Elevation 4,000–9,000 feet amsl. | Apache, Cochise, Greenlee, Gila, Graham, and Navajo Counties. Tonto National Forest: only found in Pinal Mountains | Unlikely to occur |
| Clifton rock daisy (*Perityle ambrosiifolia*) | BLM: S | No | No | No | Occurs in fissures and crevices in conglomerate rock near seeps and waterfalls; high desert above and riparian below | Species occurs on cliffs above Eagle Creek and San Francisco River in Greenlee County | Unlikely to occur |
| Cochise sedge (*Carex ultra*); also (*Carex spissa* var. *ultra*) | CNF: S<br>TNF: S<br>BLM: S | No | No | No | Stream banks, wet seeps, sometimes on serpentine. Elevation lower than 1,970 feet amsl. | Apache, Cochise, Graham, Pima, Pinal, Santa Cruz and Yavapai Counties | Unlikely to occur |
| Countess Dalhousie's spleenwort (*Asplenium dalhousiae*) | BLM: S | No | No | No | Moist, rocky ravines, terrestrial among and at bases of rocks. Elevation 4,260–6,570 feet amsl. | Cochise and Pima Counties<br>Only found in the Mule, Huachuca, and Baboquivari Mountains of southern Arizona | Unlikely to occur |
| Crenulate moonwort (*Botrychium crenulatum*) | CNF: S | No | No | No | Wet, marshy, and springy areas, including marshy meadows, edges of marshes, saturated soils of seeps, bottoms and stabilized margins of small streams. Sites partly to heavily shaded and usually have dense vegetation cover. Elevation 3,930–8,210 feet amsl. | Native, no county data | Unlikely to occur |
| Eastwood alum root (*Heuchera eastwoodiae*) | CNF: S<br>TNF: S | No | No | No | Shaded, rocky slopes. Elevation 4,920–6,250 feet amsl. | Coconino, Gila, Maricopa, and Yavapai Counties | Unlikely to occur |
| Fickeisen plains cactus (*Pediocactus peeblesianus* var. *fickeiseniae*) | ESA: E (Coconino, Mohave, and Navajo Counties)<br>BLM: S | No | No | No | Occurs on gravelly soils of alkaline desert scrub and desert grasslands; elevational range of 3,985–5,940 feet amsl. | Endemic to northern Arizona, found in Coconino, Mohave, and Navajo Counties | Unlikely to occur |
| Fish Creek fleabane (*Erigeron piscaticus*) | TNF: S<br>BLM: S | No | No | No | Gravelly and sandy washes. Elevation 2,290–3,940 feet amsl. | Maricopa and Graham Counties | Unlikely to occur |
| Fish Creek rockdaisy (*Perityle saxicola*) | TNF: S | No | No | No | Cracks and crevices on very steep cliff faces, large boulders and rocky outcrops in canyons, and on buttes. Steep cliffs with generally east and northeast exposures, with slopes from 50 to 100 percent. Elevational range of 2,000–3,500 feet amsl. | Gila and Maricopa Counties. On Tonto National Forest occurs near Roosevelt Lake Dam and in Sierra Ancha Mountains, suspected to be in Superstition Mountains | Unlikely to occur |
| Flagstaff beardtongue (*Penstemon nudiflorus*) | CNF: S | No | No | No | Dry ponderosa pine forests in mountainous regions south of the Grand Canyon. Elevation 4,490–6,990 feet amsl. | Coconino, Navajo, and Yavapai Counties | Unlikely to occur |
| Flagstaff false pennyroyal (*Hedeoma diffusum*) | CNF: S | No | No | No | Rocky pavement, cliff, and limestone break habitats in the ponderosa pine vegetation type. Elevation 6,000–7,000 feet amsl. | Coconino, Navajo, and Yavapai Counties | Unlikely to occur |
| Galiuro aka Aravaipa sage (*Salvia amissa*) | TNF: S<br>BLM: S | No | No | No | Stream banks and moist meadows in full sun or light shade. Elevation 1,509–3,010 feet amsl. | Cochise, Gila, and Graham Counties | Unlikely to occur |
| Gentry's indigobush (*Dalea tentaculoides*) | BLM: S | No | No | No | Canyon bottoms on cobble terraces subject to occasional flooding, in sandy, gravelly loam Rhyolite parent material. Elevation 3,600–4,600 feet amsl. | Pima, Cochise, and Santa Cruz Counties | Unlikely to occur |

| **Common Name (*Scientific Name*)** | **Status*** | **HDMS Records within 2 miles** | **Baseline Data Records** | **Other Occurrence Records (SEINet, NatureServe)** | **Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)** | **Geographical Range in Arizona** | **Likelihood of Occurrence in Offered Lands Analysis Area** |
|---|---|---|---|---|---|---|---|
| Grand Canyon century plant aka Phillip's agave (*Agave phillipsiana*) | CNF: S | No | No | No | Sandy to gravelly places with desert scrub. Elevation 2,290–3,610 feet amsl. | Known only from four sites within Grand Canyon National Park | Unlikely to occur |
| Heathleaf wild buckwheat (*Eriogonum ericifolium* var. *ericifolium*) | CNF: S | No | No | No | Gravelly or rocky slopes of lacustrine silt, mixed grasslands, chaparral and oak-woodlands. Elevation 2,950–3,610 feet amsl. | Coconino, Pima, and Yavapai Counties | Unlikely to occur |
| Hohokam agave aka. Murphey agave (*Agave murpheyi*) | TNF: S<br>BLM: S | No | No | No | Mountainous slopes in dry chaparral and desert areas. Near drainage systems in desert scrub. Elevation 1,310–3,280 feet amsl. | Gila, Maricopa, Pinal, and Yavapai Counties | Possible to occur: Apache Leap South, Cave Creek |
| Huachuca golden aster (*Heterotheca rutteri*) | BLM: S | No | No | No | Grasslands with mesquite, grassy understory in oak woodlands, grassy floodplains, sandy, loamy soils. Elevation 3,280–4,920 feet amsl. | Cochise, Santa Cruz, and Pima Counties | Possible to occur: Appleton Ranch |
| Huachuca Mountain milkvetch (*Astragalus hypoxylus*) | BLM: S | No | No | No | Oak woodland with south to southwest exposures. Elevation 5,300–5,500 feet amsl. | Santa Cruz and Cochise Counties | Unlikely to occur |
| Huachuca water umbel (*Lilaeopsis schaffneriana* ssp. *recurva*) | ESA: E (Cochise, Pima, and Santa Cruz Counties)<br>BLM: S | No | Appleton Ranch (WestLand Resources Inc. 2004b) | No | The majority of this species occur along the San Pedro River, in the Huachuca Mountains, and along Cienega Creek in the San Pedro River and Santa Cruz River watersheds | Occurs on lands administered by the U.S. Army Fort Huachuca, the Forest Service, the BLM, the U.S. Fish and Wildlife Service, Arizona Parks, Pima County, The Nature Conservancy, and private landowners | Unlikely to occur |
| Kearney's blue star (*Amsonia kearneyana*) | BLM: S | No | No | No | Stable alluvial deposits of small boulders and cobbles along a dry wash. Grows in full sun or partial shade in riparian vegetation zone surrounded by Sonoran Desert Scrub. | Found only in Pima County | Unlikely to occur |
| Lace-leaf rockdaisy (*Perityle ambrosiifolia*) | BLM: S | No | No | No | In fissures and crevices of north- or east-facing cliffs and canyon walls; conglomerate, sandstone, or rhyolite rock, often near seeps and waterfalls. Found within pinyon-juniper grassland communities. Elevation 1,640–4930 feet amsl. | Greenlee County | Unlikely to occur |
| Lyngholm's cliffbrake (*Pellaea lyngholmii*) | CNF: S | No | No | No | Rocky slopes and ledges, usually on sandstone. Elevation 3,935–5905 feet amsl. | Coconino and Yavapai Counties | Unlikely to occur |
| Mapleleaf false snapdragon (*Mabrya acerifolia*) | TNF: S | No | No | No | Occurs on rock overhangs and in bare rock/talus/scree, cliff, and desert habitats. Elevation around 2,000 feet amsl. | Maricopa and Pinal Counties; all localities occur in the Mesa Ranger District | Unlikely to occur |
| Mearns' bird-foot trefoil aka horseshoe deer vetch (*Lotus mearnsii* var. *equisolensis*) | TNF: S | No | No | No | Desert scrub growing on late Tertiary lacustrine deposits at an elevation of 2,100 feet amsl | Known only from Horseshoe Reservoir, Maricopa County | Unlikely to occur |
| Metcalfe's tick-trefoil (*Desmodium metcalfei*) | CNF: S | No | No | No | Rocky slopes and canyons in grasslands, oak-pinyon-juniper woodlands, and riparian forests. Elevation between 4,000–6,500 feet amsl. | Cochise, Coconino, Gila, Pinal, Santa Cruz and Yavapai Counties | Unlikely to occur |
| Mogollon thistle (*Cirsium parryi* ssp. *mogollonicum*) | CNF: S | No | No | No | Moist to very moist soils in riparian understory of perennial stream with ponderosa pine, Douglas-fir, and white fir. Elevation 7,200 feet amsl. | Endemic to <1 square mine in Dane Canyon in Coconino County | Unlikely to occur |
| Mt. Dellenbaugh sandwort (*Arenaria aberrans*) | CNF: S | No | No | No | Oak and pine forests, mixed forests/woodland | Gila and Yavapai Counties | Unlikely to occur |
| Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*) | ESA: E (Maricopa, Pima, and Pinal Counties)<br>BLM: S | No | No | No | Found on limestone substrates along dissected alluvial fans, inclined terraces and saddles, bajadas, and debris flow. It grows in open areas and partially to shaded areas underneath the canopy of shrubs and trees, or sheltered next to rocks on steep slopes and within limestone outcrops. Occurs within the Upland Division of Sonoran Desert scrub on 0 to 30 percent slopes with north-, west-, and south-facing exposure. Elevation 2,400–4,000 feet amsl. | Endemic to the Sonoran Desert and occurs on isolated mountain ranges within south-central Arizona in Pima and Pinal Counties | Unlikely to occur |

| Common Name (*Scientific Name*) | Status* | HDMS Records within 2 miles | Baseline Data Records | Other Occurrence Records (SEINet, NatureServe) | Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence in Offered Lands Analysis Area |
|---|---|---|---|---|---|---|---|
| Page Springs agave (*Agave yavapaiensis*) | CNF: S | No | No | No | Rocky, clayey-loamy igneous derived soils, less frequently on limestone soils in semi-arid desert grassland to pinyon-juniper woodland | Known only from 10 populations occurring near habitation and agricultural and archaeological sites associated with pre-Columbian cultures | Unlikely to occur |
| Peebles Navajo cactus (*Pediocactus peeblesianus* var. *peeblesianus*) | ESA: E (Navajo County)<br>BLM: S | No | No | No | Weakly alkaline, gravelly soils where the host gravel can occur on a variety of substrates. Elevation between 5,400 and 5,600 feet amsl. | Central Navajo County, near Holbrook, Arizona | Unlikely to occur |
| Parish's Indian mallow (*Abutilon parishii*) | TNF: S<br>BLM: S | No | No | No | Mountain slopes and desert scrublands. Elevation is 3,280 feet amsl. | Found in Maricopa, Gila, Graham, Pima, Pinal, and Yavapai Counties | Possible to occur: Apache Leap South, Dripping Springs |
| Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) | BLM: S | No | No | No | Alluvial valleys, mesas, and hillsides in desert, desert grassland, or southwestern oak woodlands. Soils range from shallow to deep, and silty to rocky, with a preference for silty to gravelly deep alluvial soils. Elevation 2,290–4,920 feet amsl. | Pima and Santa Cruz Counties | Unlikely to occur |
| Ripley's wild buckwheat (*Eriogonum ripleyi*) | CNF: S<br>TNF: S | No | No | No | Sandy clay flats and slopes on edges of sandstone outcrops, oak-juniper woodlands. Elevation 3,280–6,235 feet amsl. | Known only from two areas in Arizona: one near Frazier's Well in Coconino County and a second in the Verde Valley area of southeastern Yavapai and extreme northwestern Maricopa County | Unlikely to occur |
| Rock fleabane (*Erigeron saxatilis*) | CNF: S | No | No | Yes | Shaded canyon walls, moist north-facing slopes, and steep rock outcrops and boulders in the stream beds of shady canyons. Elevation 4,390–6,990 feet amsl. | Coconino, Gila, and Yavapai Counties | Known to occur: East Clear Creek |
| Round dunebroom (*Errazurizia rotundata*) | BLM: S | No | No | No | Sandy areas or in crevices of rock on rocky hilltops and ledges. | Coconino and Navajo Counties | Unlikely to occur |
| Rusby's milk-vetch (*Astragalus rusbyi*) | CNF: S | No | No | No | Meadows in yellow pine forest or edge of thickets and aspen groves, in dry or temporarily moist basaltic soils; elevational range of 5,400–8,000 feet amsl. | Occurs in the Flagstaff area and the lower slopes of the San Francisco Peaks descending into Oak Creek Canyon, in Coconino County | Unlikely to occur |
| Rusby's milkwort (*Polygala rusbyi*) | CNF: S<br>TNF: S | No | No | No | Desert grasslands and juniper woodlands. Elevation 3,000–5,000 feet amsl. | Maricopa, Mohave, and Yavapai Counties | Unlikely to occur |
| Salt River rock daisy (*Perityle gilensis* var. *salensis*) | TNF: S | No | No | No | Crevices on cliff faces, ledges, and rock outcrops in Mojave Sonoran desert scrub, semi-desert grassland, juniper grass, and interior chaparral associations | Only two known sites, located along the Salt River Canyon. | Unlikely to occur |
| San Francisco Peaks groundsel (*Packera franciscana*) | ESA: T (Coconino County) | No | No | No | Talus slopes, rock crevices, above timberline. Elevation 10,500–12,470 feet amsl. | Known only from above timberline in the San Francisco Peaks | Unlikely to occur |
| San Pedro River wild buckwheat (*Eriogonum terrenatum*) | BLM: S | No | No | No | Clayey slopes and flat, creosote bush communities. Elevation 3,280–3,940 feet amsl. | Pima and Cochise Counties | Unlikely to occur |
| Sierra Ancha fleabane (*Erigeron anchana*) | TNF: S | No | No | No | Rock crevices and ledges on boulders or on vertical cliff faces, usually in canyons. Granite cliff faces, chaparral through pine forests. | Found in Gila County in the Sierra Ancha, Mazatzal, and Mescal Mountains as well as Pine Creek | Unlikely to occur |
| Sunset Crater beardtongue (*Penstemon clutei*) | CNF: S | No | No | No | Volcanic cinder cones, either in open areas or under ponderosa pines in spots without leaf litter. Elevation is 6,988 feet amsl. | Near Sunset Crater in Coconino County | Unlikely to occur |
| Texas purple-spike (*Hexalectris warnockii*) | BLM: S | No | No | No | Shaded slopes and dry, rocky creek beds in canyons, in leaf mold in oak-juniper-pinyon pine woodlands. Elevation 1,965–6,565 feet amsl. | Found in Cochise County | Unlikely to occur |
| Tonto Basin agave (*Agave delamateri*) | CNF: S<br>TNF: S | No | No | No | Gravelly places with desert scrub, rarely in chaparral or pinyon-juniper woodlands. Elevation 2,295–5,250 feet amsl. | Gila, Maricopa, and Yavapai Counties | Possible to occur: Turkey Creek |
| Toumey's groundsel (*Packera neomexicana* var. *toumeyi*) | TNF: S | No | No | No | Found in oak chaparral and occasionally pine forest; elevational range of 3,000–9,000 feet amsl. | Cochise and Gila Counties, on Tonto National Forest found in the Pinal Mountains | Unlikely to occur |

| **Common Name (*Scientific Name*)** | **Status*** | **HDMS Records within 2 miles** | **Baseline Data Records** | **Other Occurrence Records (SEINet, NatureServe)** | **Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)** | **Geographical Range in Arizona** | **Likelihood of Occurrence in Offered Lands Analysis Area** |
|---|---|---|---|---|---|---|---|
| Tumamoc globeberry (*Tumamoca macdougalii*) | BLM: S | No | No | No | Semidesert grasslands, sandy washes and gullies, Sonoran desert scrub | Maricopa, Pima, and Pinal Counties | Unlikely to occur |
| Verde breadroot (*Pediomelum verdiense*) | TNF: S | No | No | No | Sonoran desert scrub or scattered juniper communities on Verde limestone or compacted roadsides | Yavapai County | Unlikely to occur |
| Verde Valley sage (*Salvia dorrii* ssp. *mearnsii*) | CNF: S | No | No | No | Sandy, rocky, or limestone soil on dry open slopes, and on flats or foothills. Elevation 960–9,800 feet amsl. | Coconino and Yavapai Counties | Unlikely to occur |

* Status Definitions

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Tonto National Forest (TNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Coronado National Forest (CNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Bureau of Land Management (BLM): Sensitive species were included from the Gila District Office

S = Sensitive. Species that could easily become endangered or extinct in the state.

**Table B-6. Noxious and invasive weed species analyzed for the offered lands parcels**

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| African rue | *Peganum harmala* | TNF<br>Arizona Department of Agriculture (ADA) | Favors disturbed and barren areas with moist soil such as roadsides, riparian corridors, and irrigation ditches; will grow in alkaline soils and high saline soils (U.S. Forest Service 2014a). Typically occurs below 4,500 feet amsl elevation; and seeds can germinate under fairly saline conditions (White 2013). | Maricopa County (Natural Resources Conservation Service 2018a). Also has been observed in Pima County along Interstate 10 near Vail, but not on Tonto National Forest (Tonto National Forest 2018). | Unlikely to occur (all).<br>All distant to known occurrences (SEINet 2018; Tonto National Forest 2018). |
| African sumac | *Rhus lancea* | TNF | Occurs in well-drained sites in woodlands, grassland margins, and riparian communities; occurs in disturbed, degraded, or cultivated sites, typically below 2,000 feet amsl (White 2013). | The USDA PLANTS database indicates that there are no records in Arizona (Natural Resources Conservation Service 2018a). No records on Tonto National Forest (Tonto National Forest 2018). However, a recent record occurs in Cave Creek approximately 3 miles downstream of the Cave Creek parcel (SEINet 2018). | May occur<br>• Cave Creek<br>Nearest occurrence is within 3 miles (SEINet 2018) and suitable habitat may occur.<br>Unlikely to occur<br>• Tangle Creek<br>• Turkey Creek<br>• Apache Leap South<br>Sites more than 15 miles from known occurrences (SEINet 2018). |
| Alligator weed | *Alternanthera philoxeroides* | ADA | Occurs in both aquatic and terrestrial habitats, often where aquatic and terrestrial habitat interface; occurs in riparian areas, canals, rivers, ditches, wetter pastures, and irrigated crops; can tolerate cold winters but cannot withstand prolonged freezing temperatures; prefers eutrophic conditions, but can survive in areas with low nutrient availability (CABI 2018). | No record in Arizona (CABI 2018; Natural Resources Conservation Service 2018a) | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Anchored water hyacinth | *Eichhornia azurea* | Federal<br>ADA | Freshwater, perennial, aquatic plant found in permanent water bodies, prefers open, slow-moving water environments (CABI 2018). | No record in Arizona (Natural Resources Conservation Service 2018a) | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Arabian schismus | *Schismus arabicus* | TNF | Occurs in disturbed, degraded, or cultivated sites in desert and semidesert grassland communities and along roadsides, typically below 4,500 feet amsl (White 2013). | Has occurrence records in Cochise, Maricopa, Mojave, Pima, and Pinal Counties (Natural Resources Conservation Service 2018a) | Unlikely to occur (all).<br>Turkey Creek occurs above the typical elevational range of this species. Cave Creek, Tangle Creek, and Apache Leap South are all distant from known occurrences (SEINet 2018) and do not occur in areas with high disturbance levels or along roads. |
| Asian mustard [Sahara mustard] | *Brassica tournefortii* | TNF | Occurs in areas with windblown sediments and disturbed areas within desert grasslands, desert scrub, and roadsides at elevations typically below 2,600 feet amsl (White 2013). | Has occurrence records in Maricopa, Pima, Pinal, and Yuma Counties (Natural Resources Conservation Service 2018a). Widespread throughout Tonto National Forest (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>• Tangle Creek<br>Contains suitable grassland or desertscrub habitat, has occurrences in vicinity (SEINet 2018), and is within or just above elevational range<br>Unlikely to occur<br>• Turkey Creek<br>Does not contain suitable habitat and is above typical elevational range.<br>Unlikely to occur<br>• Apache Leap South<br>Does not contain disturbed areas or roadsides and is well above typical elevational range. |
| Austrian fieldcress [Austrian yellowcress] | *Rorippa austriaca* | ADA | Perennial that occurs in wet soil, on disturbed and cultivated sites including roadsides, fields, and mud flats; prefers soils that are wet 6–8 months of the year (University of Nevada Reno 2004). | No records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Black mustard | *Brassica nigra* | TNF | Occurs in dry disturbed sites such as along roadsides, railroad rights-of-way, pastures, and waste places at elevations below 7,000 feet amsl (White 2013). | Has occurrence records in Cochise, Coconino, Maricopa, Pima, and Pinal Counties (Natural Resources Conservation Service 2018a). Occurs along State Route 188 through Tonto Basin, and along State Route 87 within Tonto National Forest (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Apache Leap South<br>• Turkey Creek<br>These sites do not contain suitable disturbed areas, and recent occurrences in the project vicinity occur on roadsides (SEINet 2018). |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Blue mustard | *Chorispora tenella* | TNF | Occurs in disturbed sites including waste places, pastures, roadsides, and railroad rights-of-way, typically below 7,500 feet amsl (White 2013). | Has occurrence records in Apache, Coconino, Maricopa, Navajo, and Yavapai Counties (Natural Resources Conservation Service 2018a). Has been found outside of the Tonto National Forest along State Route 69 between Cordes Junction and Prescott; in Prescott; and north of Holbrook (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Apache Leap South<br>• Turkey Creek<br>These sites do not contain suitable disturbed areas, and occurrences are distant to project areas (SEINet 2018). |
| Branched broomrape [hemp broomrape] | *Orobanche ramosa* | Federal<br>ADA | Requires relatively high temperatures for optimum germination and growth and occurs mainly in irrigated crops grown under summer conditions in tropical and sub-tropical climates. Adapted to soils of generally high PH and are associated with the crops they attack (CABI 2018). | No record in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Buffelgrass | *Pennisetum ciliare* | TNF<br>ADA | Alkaline soils and within arid areas with high nutrients and moisture (Allen 2017). Extremely drought tolerant and reestablishes quickly and expands infestation following fire (Tonto National Forest 2018). | Has occurrence records in Maricopa, Pima, Pinal, and Yuma Counties (Natural Resources Conservation Service 2018a). Common in Phoenix, and spreading onto Tonto National Forest along State Routes 60 and 87, Pima Road in Scottsdale, Cave Creek Road, and others (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>• San Pedro River<br>Near known occurrences and/or are in close proximity to a main road which may serve as a vector for this species or close to a known occurrence (SEINet 2018; Tonto National Forest 2018)<br>Unlikely to occur<br>• Tangle Creek<br>• East Clear Creek<br>• Turkey Creek<br>• Apache Leap South<br>• Dripping Springs<br>Distant from main roads that could serve as a vector for this species.<br>Unlikely to occur<br>• Appleton Ranch parcels<br>No records in vicinity (SEINet 2018). |
| Bull thistle | *Cirsium vulgare* | TNF | Occurs most often in areas that have been recently or repeatedly disturbed (e.g., overgrazed rangelands, recently burned forests, clear-cuts, and along roads and ditches); prefers soil of intermediate moisture (U.S. Forest Service 2018d). Typically occurs at elevations between 4,500 and 9,100 feet amsl (White 2013). | Has occurrence records in Apache, Cochise, Coconino, and Navajo Counties (Natural Resources Conservation Service 2018a). Common from Flagstaff to south of Mogollon Rim (Tonto National Forest 2018). | Unlikely to occur<br>• Tangle Creek<br>• Turkey Creek<br>• Apache Leap South<br>• Dripping Springs<br>• East Clear Creek<br>At least 10 miles from known occurrences (SEINet 2018). No recent burns, or repeatedly disturbed areas occur in the parcels. |
| Burclover | *Medicago polymorpha* | ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within meadows, grasslands, woodlands, and forest communities, typically between 4,000 and 8,000 feet amsl (White 2013). | Has occurrence records in Apache, Cochise, Gila, Maricopa, Pima, Pinal, and Yavapai Counties (Natural Resources Conservation Service 2018a). | Unlikely to occur<br>• East Clear Creek<br>• Turkey Creek<br>• Apache Leap South<br>• Appleton Ranch<br>• Dripping Springs<br>Distant from known records (SEINet 2018).<br>Unlikely to occur<br>• Cave Creek<br>• San Pedro River<br>• Tangle Creek<br>Recent records in vicinity (SEINet 2018) but well below typical elevational range. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Camelthorn | *Alhagi maurorum* | TNF<br>ADA | Occurs in moist sites that are cultivated, disturbed or degraded; typically found at 4,500–5,000 feet amsl within meadows, grasslands, and riparian communities (White 2013). | Has occurrence records in Apache, Coconino, Gila, Maricopa, and Navajo Counties (Natural Resources Conservation Service 2018a). Heavy infestations in northeastern part of state; near Painted Rock Dam; southwest of Phoenix; west of Phoenix near Loop 101; Chandler; Highway 60 just north of Globe; Highway 60 north of the Salt River; but, not yet on Tonto National Forest (Tonto National Forest 2018). | Unlikely to occur (all).<br>All sites are distant from known occurrence records (SEINet 2018; Tonto National Forest 2018).<br>Does not occur in grassland or meadow habitat; outside of typical elevation range:<br>• Cave Creek<br>• Tangle Creek<br>• Dripping Springs<br>• San Pedro River<br>Do not contain suitable degraded moist habitat:<br>• Apache Leap South<br>• Appleton Ranch parcels<br>Outside typical elevation; habitat not degraded, disturbed, or cultivated:<br>• Turkey Creek<br>• East Clear Creek |
| Canada thistle | *Cirsium arvense* | TNF<br>ADA | Occurs most commonly in disturbed upland areas (e.g., barrens, meadows, fields, pastures), but can also invade wet areas with fluctuating water levels (U.S. Forest Service 2018d). Typically occurs at elevations 4,200–8,300 feet amsl (White 2013). | Has occurrence records in Apache, Coconino, and Yavapai Counties (Natural Resources Conservation Service 2018a). Occurs in northeast part of state, and near the OW Ranch, west of Canyon Creek on the Tonto National Forest (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Apache Leap South<br>• Turkey Creek<br>• Dripping Springs<br>• San Pedro River<br>• Appleton Ranch<br>Parcels distant from known locations (SEINet 2018; Tonto National Forest 2018).<br>Unlikely to occur<br>• Turkey Creek<br>• East Clear Creek<br>Known occurrence about 10 miles southwest of parcel (SEINet 2018); however, site not disturbed. |
| Carolina horsenettle | *Solanum carolinense* | ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within grassland and woodland communities; prefers sandy, well-drained soils at elevations from 4,000 to 5,000 feet amsl (White 2013). | In Arizona, known only one site along Queen Creek (SEINet 2018). | Unlikely to occur (all).<br>Sites are distant from only known occurrence in Arizona (SEINet 2018). |
| Common purslane [little hogweed] | *Portulaca oleracea* | ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within meadows, grassland, woodland, and forest communities; can be found in soil containing loam, sand, or gravelly material at elevations from 4,000 to 8,500 feet amsl; can tolerate heat and drought (White 2013). | Observed in all Arizona counties except La Paz, Pinal, and Yuma (Natural Resources Conservation Service 2018a). | Known to occur on Appleton Ranch NE parcel (SEINet 2018).<br>May occur<br>• Tangle Creek<br>Despite being distant to known occurrences, this parcel contains well-used roads and is within typical elevational range:<br>Unlikely to occur<br>• San Pedro River<br>It contains suitable disturbed habitat and is within 10 miles of documented occurrences (SEINet 2018); however, it is found within Sonoran desertscrub biotic community and is well below the typical elevation for this species.<br>Unlikely to occur<br>• Cave Creek<br>• East Clear Creek<br>• Turkey Creek<br>• Apache Leap South<br>• Dripping Springs<br>Parcels do not contain suitable disturbed or degraded habitat, and roads within or near the parcel appear to be minor and seldom used. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Common teasel [Fuller's teasel] | *Dipsacus fullonum* | TNF | Prefers open, sunny habitats and commonly occurs in disturbed areas including roadsides and pastures; grows in both moist and arid soils, but more commonly found in mesic soils (U.S. Forest Service 2014b). Typically occurs at elevations ranging from 4,700 to 8,700 feet amsl (White 2013). | Has occurrence records in Coconino County (Natural Resources Conservation Service 2018a). Occurs at Watson Woods on Granite Creek near Prescott; at Shumway Millsite, south of Payson and at Sharp Creek Campground on Tonto National Forest (Tonto National Forest 2018). | May occur<br>• Turkey Creek<br>Is within the typical elevational range and is approximately 7 miles north of the nearest occurrence (SEINet 2018).<br>Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Apache Leap South<br>• East Clear Creek<br>These sites do not contain suitable disturbed roadsides or pastures, and are distant from recent occurrences (SEINet 2018). |
| Creeping wart cress [Greater swinecress] | *Coronopus squamatus* | ADA | Occurs in disturbed areas, including agricultural fields, orchards, turf, roadsides, banks of ditches; tolerates saline soil (Winston et al. 2014). | No records in Arizona (CABI 2018; Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Dalmatian toadflax | *Linaria dalmatica* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within meadows, grassland, woodland, and riparian communities at elevations ranging from 4,400 to 10,000 feet amsl (White 2013). | Has occurrence records in Coconino and Yavapai Counties (Natural Resources Conservation Service 2018a). Common around Flagstaff; widespread in ponderosa pine forests on Kaibab, Coconino, and Prescott National Forests; on Tonto National Forest, grows at Hot Shot Base, along State Route 87 between Payson and Rye, and near the Verde River 1 mile downstream of Childs (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Dripping Springs<br>• San Pedro River<br>Well below elevational range<br>Unlikely to occur<br>• Apache Leap South<br>• East Clear Creek<br>• Appleton Ranch parcels<br>Known occurrences are at least 15 miles from parcels (SEINet 2018; Tonto National Forest 2018). |
| Diffuse knapweed | *Centaurea diffusa* | TNF<br>ADA | Prefers well-drained soils within cultivated, disturbed, or degraded sites along roadsides or within meadows, grassland, woodland, and forest communities at elevations typically below 7,200 feet amsl (White 2013). | Has occurrence records in Apache County (Natural Resources Conservation Service 2018a). Common on private lands in Young; on Tonto National Forest occurs at Pleasant Valley airport; Pleasant Valley Ranger Station, along Cherry Creek, and along Highway 288 at Board Tree Saddle (south of Young) (Tonto National Forest 2018). | Unlikely to occur. Cave Creek<br>• Tangle Creek<br>• East Clear Creek<br>• South Apache Leap<br>• San Pedro River<br>• Appleton Ranch parcels<br>• Dripping Springs<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018).<br>Unlikely to occur<br>• Turkey Creek<br>Site is approximately 12 miles southwest of the nearest occurrences, and does not contain suitable disturbed or degraded habitat. |
| Dodder | *Cuscuta* spp. (except for natives) | Federal<br>ADA | Alluvium, sandy soils, desert shrub community (NatureServe 2018).<br>Parasitic annual plant species, some of which infest crops, and some that infest salty marshes, flats, or ponds (University of California Statewide Integrated Pest Management Program 2017). | Has occurrence records in all counties except Apache, Graham, and Greenlee (Natural Resources Conservation Service 2018a). | May occur (all).<br>*Cuscuta* spp. is widespread and species inhabit a wide variety of habitats, and have occurrence records throughout Arizona (SEINet 2018).<br>Unlikely to occur<br>• East Clear Creek |
| Downy brome [cheatgrass] | *Bromus tectorum* | TNF | Occurs from valley bottoms to high mountainous areas; quickly invades disturbed sites. Prefers well-drained soils of any texture but is not well adapted to saline or sodic soil conditions or wet soil (Natural Resources Conservation Service 2018a). | Has occurrence records in all counties except Cochise, Greenlee, La Paz, Pinal, Santa Cruz, and Yuma (Natural Resources Conservation Service 2018a). | May occur.<br>• Cave Creek<br>• Apache Leap South<br>• Turkey Creek<br>• Tangle Creek<br>• East Clear Creek<br>This species is widespread and does not appear to be limited to paved roadsides or extremely disturbed areas (SEINet 2018). |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Dryer's woad | *Isatis tinctoria* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within grassland or woodland communities; prefers dry rocky or sandy soils at elevations from 4,300 to 7,000 feet amsl (White 2013). | No records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Dudaim melon [cantaloupe] | *Cucumis melo* | ADA | Occurs in disturbed areas with abundant moisture, including fields, roadsides, and ditches (Winston et al. 2014). | No records in Arizona (Natural Resources Conservation Service 2018a; Winston et al. 2014). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Field bindweed | *Convolvulus arvensis* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within grassland, chaparral, woodland, forest, and riparian communities at elevations ranging from 3,500 to 10,000 feet amsl (White 2013). | Has occurrence records in all Arizona counties (Natural Resources Conservation Service 2018a). | May occur<br>• San Pedro River<br>• Appleton Ranch parcels<br>• Tangle Creek<br>• Turkey Creek<br>Although some parcels below typical elevational range, they contain suitable disturbed habitat, and there are occurrence records nearby (SEINet 2018).<br>Unlikely to occur<br>• Cave Creek<br>• East Clear Creek<br>• Apache Leap South<br>• Dripping Springs<br>Distant from known occurrences (SEINet 2018) and minimal disturbed habitat. |
| Field sandbur | *Cenchrus spinifex [incertus]* | TNF<br>ADA | Prefers sandy or gravelly sites that have been disturbed, or degraded sites at elevations between 3,500 and 5,000 feet amsl (White 2013). | Has occurrence records in all counties except La Paz, Pinal, and Yuma (Natural Resources Conservation Service 2018a). Occurs east of Tonto National Forest on the Fort Apache Reservation along the right-of-way for Highway 60 east; Occurs on Tonto National Forest on right-of-way of State Route 188, a few miles north of Globe, Arizona (Tonto National Forest 2018). | May occur<br>• Appleton Ranch parcels<br>May contain suitable degraded sandy or gravelly sites, and there are known occurrences approximately 3.5 miles north of the parcels (SEINet 2018).<br>Unlikely to occur<br>• Tangle Creek<br>• Cave Creek<br>• East Clear Creek<br>• Apache Leap South<br>• Turkey Creek<br>• San Pedro River<br>• Dripping Springs<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018). |
| Five-stamen tamarisk | *Tamarix chinensis* | TNF | Desert riparian habitats, including seeps, springs, and roadsides; may tolerate saline soil (CABI 2018). | Has occurrence records in all Arizona counties except Greenlee, La Paz, Pinal, and Yuma (Natural Resources Conservation Service 2018a). On Tonto National Forest, saltcedar occurs along the Verde River and its tributaries; along much of the Salt River; and along Salt and Verde River reservoirs (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>• Tangle Creek<br>• Turkey Creek<br>This species occurs in Cave Creek approximately 3 miles south of the parcel (SEINet 2018), and may occur at Tangle Creek and Turkey Creek, if sufficient water occurs.<br>Unlikely to occur<br>• Apache Leap South<br>• East Clear Creek<br>Lacks riparian habitat or roadsides. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Fountain grass | *Pennisetum setaceum* | TNF | Usually found along roadways or in rangelands. Prefers arid to semi-arid conditions, but can occur in mesic environments; usually occurs in areas with mild winters and summer moisture; prefers open, sunny areas with well-drained soils (CABI 2018). | Has occurrence records in Cochise, Maricopa, Pima, and Santa Cruz Counties (Natural Resources Conservation Service 2018a). Documented in all desert districts within the Tonto National Forest; very abundant along Highway 60 between Superior and mountain tunnel; also occurs along State Route 87, along the road to Bartlett and Horseshoe Reservoirs, and in the Salt River Recreation Area (Tonto National Forest 2018). | May occur<br>• Apache Leap South<br>• Cave Creek<br>Contain suitable habitat and have occurrence records within approximately 2 miles (SEINet 2018).<br>Unlikely to occur<br>• Tangle Creek<br>• Turkey Creek<br>• East Clear Creek<br>These sites are distant from known occurrences, and do not contain suitable habitat (SEINet 2018). |
| Floating water hyacinth | *Eichhornia crassipes* | ADA | Aquatic, floating plant that occurs in tropical and subtropical freshwater lakes and rivers (CABI 2018). | Has occurrence records in Maricopa County (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>Cave Creek does not contain perennial aquatic habitat. The nearest known occurrence is approximately 14 miles northwest of the Cave Creek Parcel, in the Agua Fria River (SEINet 2018). |
| Giant reed | *Arundo donax* | TNF | Occurs in moist areas including ditches, stream and riverbanks, and floodplains; prefers well-drained soils with abundant moisture; will tolerate a wide variety of conditions, including high salinity; will tolerate a wide range of soil types from clay to sand; typically occurs below 4,000 feet amsl (White 2013). | Has occurrence records in Cochise, Maricopa, and Navajo Counties (Natural Resources Conservation Service 2018a). Occurs upstream of Tonto National Forest on the Upper Verde, with potential to invade in a large river scouring event (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>If sufficient moisture occurs, as there are occurrence records 3 miles downstream (SEINet 2018).<br>Unlikely to occur<br>• Apache Leap South<br>• Turkey Creek<br>• Tangle Creek<br>• East Clear Creek<br>Sites are at least 30 miles from the nearest known occurrence (SEINet 2018; Tonto National Forest 2018) and Apache Leap South does not contain suitable moist habitat. |
| Giant salvinia | *Salvinia molesta* | Federal<br>ADA | Prefers warm, fresh water in temperate and subtropical climates (Chambers and Hawkins 2002). | Found in slow-moving water or still-water canals, ponds, rivers, lakes, and reservoirs (Chambers and Hawkins 2002). Occurrence records from the southwest portion of Arizona, in and near the Colorado River (SEINet 2018). | Unlikely to occur (all).<br>All parcels are distant from nearest known location in the Colorado River (SEINet 2018). |
| Globe chamomile [stinknet] | *Oncosiphon piluliferum* | TNF | Occurs in disturbed areas including waste places, pastures, and along roadsides; typically found below 3,500 feet amsl elevation; this annual is a pioneer species within disturbed sites (White 2013). | Has occurrence records in Maricopa, Pinal, and Yavapai Counties (Natural Resources Conservation Service 2018a). Documented along I-17 north of Phoenix, near Skunk Tank Ridge south of Cave Creek on the Cave Creek Ranger District, at the Cave Creek Ranger Station, at the Sonora Desert National Monument, Pinal City near Superior, along State Route 84 west of Casa Grande, Extension Service Demonstration Garden (east Broadway in Phoenix), on Carefree Highway 4 miles east of I-17, and growing in cultivation at the Desert Botanical Garden and Boyce Thompson Arboretum (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>Occurrence records less than 3 miles south of the site (SEINet 2018).<br>Unlikely to occur<br>• Apache Leap South<br>• Tangle Creek<br>• Turkey Creek<br>• East Clear Creek<br>Known occurrences are more than 10 miles from these sites (SEINet 2018), and these sites do not contain typical disturbed habitats. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Globe-podded hoary cress [whitetop] | *Cardaria draba* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded moist sites along roadsides or within meadows, grassland, chaparral, woodland, forest, and riparian communities; prefers alkaline to saline soils, but will tolerate a wide variety of soil and moisture conditions; typically found between 3,000 and 8,000 feet amsl (White 2013). | Has occurrence records in Navajo, Santa Cruz, and Yavapai Counties (Natural Resources Conservation Service 2018a). *Cardaria* spp. has been recorded in Prescott, Camp Verde, Flagstaff, and Cottonwood, and on the upper Verde River near Perkinsville; on the Tonto National Forest, occurs on the Pleasant Valley Ranger District (Tonto National Forest 2018). | May occur<br>• Appleton Ranch parcels<br>• East Clear Creek<br>• Turkey Creek<br>Known occurrences nearby (SEINet 2018; Tonto National Forest 2018) and suitable moist habitat may be present.<br>Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018).<br>Unlikely to occur<br>• Dripping Springs<br>• Apache Leap South<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018).<br>Unlikely to occur<br>• San Pedro River<br>Distant from known occurrences (SEINet 2018) and parcel is below usual elevational range. |
| Hairy white-top | *Cardaria pubescens* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded moist sites along roadsides or within meadows, grassland, chaparral, woodland, forest, and riparian communities; prefers alkaline to saline soils, but can tolerate a wide range of soils and moisture conditions; typical elevation is 3,000 to 8,000 feet amsl (White 2013). | *Cardaria* spp. has been recorded in Prescott, Camp Verde, Flagstaff, and Cottonwood, and on the upper Verde River near Perkinsville; on the Tonto National Forest, occurs on the Pleasant Valley Ranger District (Tonto National Forest 2018). | May occur<br>• East Clear Creek<br>• Turkey Creek<br>Known occurrences nearby (SEINet 2018; Tonto National Forest 2018) and suitable moist habitat may be present.<br>Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Appleton Ranch parcels<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018)<br>Unlikely to occur<br>• Dripping Springs<br>• Apache Leap South<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018) and does not contain disturbed or degraded moist sites:<br>Unlikely to occur<br>• San Pedro River<br>Distant from known occurrences (SEINet 2018) and parcel is below usual elevational range. |
| Halogeton [saltlover] | *Halogeton glomeratus* | ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides or within grassland or woodland communities; prefers open areas and alkaline and saline soils, generally at elevations ranging from 4,000 to 6,500 feel amsl (White 2013). | Has occurrence records in Apache, Navajo, and Mohave Counties (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>• San Pedro River<br>• Cave Creek<br>• Tangle Creek<br>Distant from known occurrences (SEINet 2018) and below typical elevational range.<br>• Appleton Ranch parcels<br>• Turkey Creek<br>• Dripping Springs<br>• Apache Leap South<br>• East Cave Creek<br>Distant from known occurrences (SEINet 2018) |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Hydrilla [waterthyme] | *Hydrilla verticillata* | Federal<br>ADA | Found mainly in freshwater aquatic systems but can tolerate low salinity. Sometimes found in upper reaches of estuaries. Found in shallow water, but in clear water can survive down to 49 feet (Chambers and Hawkins 2002). | Has occurrence records in Maricopa County (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>There are known occurrences in the Phoenix metropolitan area (SEINet 2018), but none in proximity to any parcels. |
| Iberian starthistle [Iberian knapweed] | *Centaurea iberica* | ADA | Occurs along banks of watercourses and other moist sites, typically below 3,200 feet amsl elevation (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Japanese brome | *Bromus japonicus* | TNF | Occurs in cultivated, disturbed, or degraded sites along roadsides and within semidesert grassland and wooded communities at elevations ranging from 4,500 to 7,200 feet amsl (White 2013). | Has occurrence records in Apache, Cochise, Coconino, Gila, Greenlee, Maricopa, Pima, and Navajo Counties (Natural Resources Conservation Service 2018a). | Unlikely to occur.<br>• Cave Creek<br>• Tangle Creek<br>• Apache Leap South<br>• Turkey Creek<br>All Tonto National Forest sites are at least 12 miles from a known occurrence (SEINet 2018), all except Turkey Creek occur below typical elevation, and Turkey Creek contains only minor disturbances. |
| Japanese knotweed | *Polygonum cuspidatum* | TNF | Riparian areas, including along streams and rivers, low-lying areas, utility rights-of-way; it rapidly colonizes scoured areas and can survive severe floods; can tolerate full shade, high temperatures, high salinity, and drought (U.S. Forest Service 2018d). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a),and is not known from Tonto National Forest (Tonto National Forest 2018). | Unlikely to occur as does not occur in Arizona:<br>• Cave Creek<br>• Turkey Creek<br>• Tangle Creek<br>• Apache Leap South |
| Jointed goatgrass | *Aegilops cylindrica* | TNF<br>ADA | Occurs above 4,000 feet amsl, occurs in disturbed areas. Occurs in dry sites in grassland or wooded communities and roadsides at elevations ranging from 5,300 to 7,000 feet amsl (White 2013). | Has occurrence records in Apache, Cochise, Coconino, Navajo, and Yavapai Counties (Natural Resources Conservation Service 2018a). Occurs along State Route 87 from Payson to Strawberry, and in the Young area (Tonto National Forest 2018). | May occur<br>• East Clear Creek<br>Site may contain suitable habitat and is situated near State Route 87.<br>Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• San Pedro River<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018) and below usual elevational range.<br>Unlikely to occur<br>• Turkey Creek<br>• Apache Leap South<br>• Dripping Springs<br>• Appleton Ranch parcels<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018). |
| Karoo bush [African sheepbush] | *Pentzia incana* | TNF | Occurs in dry, disturbed sites including waste places, pastures, and along roadsides within desert, semidesert, grassland, chaparral oak scrub and pinyon-juniper woodland communities typically below 5,300 feet amsl elevation (White 2013). | Occurrence records in Graham County (Natural Resources Conservation Service 2018a). Has been documented at one site on Tonto National Forest, north of the Oak Flat Campground on the Globe Ranger District (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Oak Flat<br>Known occurrences are more than 30 miles (SEINet 2018).<br>Unlikely to occur<br>• Apache Leap South<br>Although the Oak Flat occurrence is within 4 miles of Apache Leap South (SEINet 2018; Tonto National Forest 2018), this parcel does not contain suitable disturbed habitat for this species. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Kochia | *Kochia scoparia [Bassia scoparia]* | TNF | Occurs in cultivated, disturbed, or degraded sites along roadsides and within grassland and woodland communities in well-drained, uncompacted soil, below 8,500 feet amsl; thrives in warm, low rainfall environments; burns easily owing to plant structure (White 2013). | Has occurrence records in Apache, Cochise, Coconino, Navajo, and Pima Counties (Natural Resources Conservation Service 2018a). | May occur<br>• Cave Creek<br>Occurrence record approximately 3 miles south (SEINet 2018).<br>Unlikely to occur<br>• Tangle Creek<br>• Turkey Creek<br>• Apache Leap South<br>Sites are minimally disturbed and are at least 10 miles from a known occurrence (SEINet 2018). |
| Leafy spurge | *Euphorbia esula* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within fields, pastures, rangeland, and riparian communities, typically between 4,600 and 9,500 feet amsl (White 2013). | Has occurrence records in Coconino County (Natural Resources Conservation Service 2018a). Has been documented in the Coconino National Forest but not on the Tonto National Forest (Tonto National Forest 2018). | Unlikely to occur (all).<br>All are more than 25 miles from nearest known occurrence (SEINet 2018; Tonto National Forest 2018). |
| Lehmann's lovegrass | *Eragrostis lehmanniana* | TNF | Occurs in cultivated, disturbed, and degraded sites on sandy flats and on calcareous slopes within desert grassland, semidesert grassland, and woodland communities and roadsides, generally between 3,500 and 4,000 feet amsl elevation (White 2013). | Has occurrence records in Cochise, Coconino, Graham, Maricopa, and Pima Counties (Natural Resources Conservation Service 2018a). Within Tonto National Forest, seeded extensively along highways, power line corridors, and after fires (Tonto National Forest 2018). | May occur<br>• Apache Leap South<br>• Turkey Creek<br>• Cave Creek<br>• Tangle Creek<br>Although several parcels are below the typical elevation, there are occurrence records within 5 miles (SEINet 2018) and suitable habitat may be present. |
| Lens podded hoary cress | *Cardaria chalepensis* | ADA | Occurs in cultivated, disturbed, or degraded moist sites along roadsides and within meadows, grassland, chaparral, woodland, forest, and riparian communities; prefers alkaline to saline soils but can tolerate a wide variety of soils and moisture conditions; elevations typically range from 3,300 to 6,000 feet amsl (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). One isolated record from 1992 occurs more than 30 miles east of the East Clear Creek Parcel (SEINet 2018). | Unlikely to occur (all).<br>No current records from Arizona. |
| Lightningweed | *Drymaria arenarioides* | Federal<br>ADA | Prefers dry areas, acidic soils, hills and plains, and stressed rangelands (Scher et al. 2015). It is well adapted to soils and climates within the *Bouteloua-Aristada* type (CABI 2018). | Invades rangeland, displacing desired vegetation and his highly toxic to livestock. This species has not been documented in the U.S., but is spreading northward, reportedly to within 1 mile of New Mexico (Scher et al. 2015).<br>No records in the United States (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in the United States. |
| Malta starthistle | *Centaurea melitensis* | TNF | Occurs in cultivated, disturbed, or degraded sites along roadways and within grassland and woodland communities at elevations below 7,200 feet amsl; is a competitive and aggressive plant (White 2013). | Has occurrence records in Apache, Cochise, Graham, Maricopa, Mohave, Pima, Pinal, and Yavapai Counties (Natural Resources Conservation Service 2018a). Widespread on Tonto National Forest at low elevations below 3,000 feet (Tonto National Forest 2018). | May occur<br>• Apache Leap South<br>• Cave Creek<br>• Turkey Creek<br>• Tangle Creek<br>Occurrence records are common on Tonto National Forest (SEINet 2018), not all of which are along roadways or below 3,000 feet amsl elevation. |
| Mediterranean grass | *Schismus barbatus* | TNF | Occurs in roadways and cultivated, disturbed, or degraded sites along roadways and in desert and semidesert grassland communities, generally below 5,000 feet amsl elevation (White 2013). | All Arizona counties except Apache, Cochise, Graham, Greenlee, and Navajo (Natural Resources Conservation Service 2018a). | May occur<br>• Apache Leap South<br>• Cave Creek<br>Within 5 miles of the nearest known occurrence (SEINet 2018) and occur within the Sonoran desertscrub biome.<br>Unlikely to occur<br>• Turkey Creek<br>• Tangle Creek<br>These sites are at higher elevation than is typical for this species, and neither site contains desert or semidesert grassland communities; known occurrences are also more than 10 miles from these sites (SEINet 2018). |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Mediterranean sage | *Salvia aethiopis* | TNF | Occurs in roadways and cultivated, disturbed, or degraded sites along roadways and within meadows, grassland, woodland, and riparian communities; prefers well-drained soil; occurs at elevations typically below 8,500 feet amsl (White 2013). | Has occurrence records in Coconino and Yavapai Counties (Natural Resources Conservation Service 2018a). | Unlikely to occur<br>• Apache Leap South<br>• Tangle Creek<br>• Turkey Creek<br>• Cave Creek<br>These sites are all at least 50 miles away from the nearest known occurrence (SEINet 2018). |
| Mexican paloverde | *Parkinsonia aculeata* | TNF | On the Tonto National Forest, infestation occurred from a single ornamental planting in Camp Creek area; typically invades waste areas at low elevations (Tonto National Forest 2018). Invasive on degraded rangelands; tolerant of drought, waterlogging, and saline conditions (CABI 2018). | Has occurrence records in Gila, Graham Maricopa, Pima, Pinal, Santa Cruz, and Yuma Counties where it is a native species (Natural Resources Conservation Service 2018a). On Tonto National Forest, a 2-acre infestation occurs from areas burned in the Cave Creek Complex fire near Camp Creek (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>This parcel is 3 miles north of a known recent occurrence (SEINet 2018).<br>Unlikely to occur<br>• Apache Leap South<br>• Tangle Creek<br>• Turkey Creek<br>These sites are distant from known occurrences (SEINet 2018; Tonto National Forest 2018). |
| Morning-glory | *Ipomeoea* spp. [all except *I. carnea* and *I. aborescens*] *I. triloba* is a "restricted pest" according to ADA (see below) | ADA | Suitable habitat depends on species. For example *I. hederacea* and *I. purpurea* occur in disturbed areas, *I. tenuiloba* occurs in pinyon-juniper woodlands (SEINet 2018). | There are 69 species of *Ipomoea*, including native and introduced species, in the PLANTS database, 15 of which have occurrence records in Arizona (Natural Resources Conservation Service 2018a). | May occur (all).<br>This genus is widespread in Arizona, and has occurrence records within 5 miles of each parcel (SEINet 2018). Disturbed areas occur within each parcel, and most parcels contain drainages or roadsides, which may contain suitable microclimates for many species within this genus. |
| Musk thistle | *Carduus nutans* | TNF | Grows from sea level up to 8,000 feet amsl in neutral to acidic soils; invades open areas (e.g., meadows or prairies) and spreads rapidly in areas of natural disturbance including landslides and flooding; does not grow well in conditions that are excessively wet, dry, or shady (U.S. Forest Service 2018d). Typically occurs between 4,200 and 8,100 feet amsl (White 2013). | Has occurrence records in Apache and Navajo Counties (Natural Resources Conservation Service 2018a). Grows on Coconino National Forest; found on the Tonto National Forest north and east of Payson in the area of the 1990 Dude Fire (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Turkey Creek<br>• Apache Leap South<br>There is no meadow or prairie habitat on any of the sites. Known occurrences are distant from the sites (SEINet 2018). |
| Oleander | *Nerium oleander* | TNF | On the Tonto National Forest, has naturalized in Camp Creek and near Boyce Thompson Arboretum; in California has been found in floodplain and riparian zones (Tonto National Forest 2018). | Has occurrence records in Maricopa County (Natural Resources Conservation Service 2018a). On Tonto National Forest, near Camp Creek and Boyce Thompson Arboretum (Tonto National Forest 2018). | Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Turkey Creek<br>• Apache Leap South<br>This species is only known from two locations on Tonto National Forest (SEINet 2018; Tonto National Forest 2018). |
| Onionweed | *Asphodelus fistulosus* | TNF<br>Federal | In the Sonoran Desert region, it seems to do best at altitudes above the desert floor that receive moderate rainfall during winter. Tends to invade disturbed land leaving its potential threat to natural areas unclear (Animal and Plant Health Inspection Service 2019). Elevation is 2,000–4,500+ feet amsl (Animal and Plant Health Inspection Service 2019).<br>Occurs in sandy or rocky disturbed sites, including roadsides, railroad rights-of-way, pastures, and waste places; typically occurs below 4,600 feet amsl; drought resistant (White 2013). | Known in the five southeastern counties (Pima, Pinal, Santa Cruz, Cochise, and Greenlee) and in an area near Sedona in Yavapai County (Animal and Plant Health Inspection Service 2019).<br>Not known to occur on Tonto National Forest (Tonto National Forest 2018). | May occur<br>• Appleton Ranch parcels<br>Disturbance occurs, and there is an occurrence record less than 1 mile south of the northeast parcel (SEINet 2018).<br>Unlikely to occur<br>• San Pedro River<br>• Dripping Springs<br>• East Clear Creek<br>Distant from known occurrences (SEINet 2018; Tonto National Forest 2018). |
| Oxeye daisy | *Leucanthemum vulgare* | TNF | Occurs in cultivated, disturbed, or degraded sites on well-drained but moist soils along roadsides and within meadows, grassland, woodland, and forest communities at elevations from 5,000 to 9,500 feet amsl (White 2013). | Has occurrence records in Apache, Coconino, Gila, and Navajo Counties (Natural Resources Conservation Service 2018a). Identified growing near Canyon Creek, Pleasant Valley Ranger District, Tonto National Forest; occurs in Flagstaff and Kachina Village, south of Flagstaff (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>All Tonto National Forest Parcels are at least 20 miles away from nearest known occurrence records (SEINet 2018). Only Turkey Creek is within the typical elevational range. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Perennial sowthistle | *Sonchus arvensis* | ADA | Occurs in cultivated, disturbed, or degraded moist sites along roadsides and within grassland, woodland, and riparian communities; can be found in non-compacted, fine, rich, slightly alkaline to neutral soils at elevations ranging from 5,000 to 6,000 feet amsl (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Periwinkle | *Vinca major* | TNF | Occurs in highly disturbed areas including old homesteads, roadsides, and waste places; also occurs in riparian areas, forests, and grasslands; typically occurs below 7,500 feet amsl elevation (White 2013). | Has occurrence records in Cochise, Coconino, Maricopa, Pima, Santa Cruz, and Yavapai Counties (Natural Resources Conservation Service 2018a). Occurs on Tonto National Forest adjacent to private lands (e.g., Grantham Homestead off Highway 288) (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>No Tonto National Forest parcel contains highly disturbed areas, and all Tonto National Forest parcels except Apache Leap South are at least 5 miles from known occurrences (SEINet 2018; Tonto National Forest 2018). |
| Plumeless thistle | *Carduus acanthoides* | TNF<br>ADA | Occurs in sites that are dry and well-drained; occurs in cultivated, disturbed, or degraded sites within meadows, grassland, chaparral, woodland, forest, and riparian communities or roadsides at elevations generally ranging from 4,200 to 8,800 feet amsl (White 2013). | While the PLANTS database shows no occurrence records in Arizona (Natural Resources Conservation Service 2018a), other sources indicate occurrence records in Petrified Forest National Park (Tonto National Forest 2018). SEINet (2018) shows no occurrences in Arizona. | Unlikely to occur (all).<br>All parcels are distant to potential occurrences in Petrified Forest National Park. |
| Puna grass | *Stipa brachychaeta* | ADA | Disturbed soils along roadsides; streambanks, and waste places (Agriculture Victoria 2017). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Puncturevine | *Tribulus terrestris* | ADA | Occurs in cultivated, disturbed, or degraded moist sites along roadsides and within grassland, woodland, and riparian communities; prefers dry, sandy soils but tolerates most soil types; found at elevations below 7,000 feet amsl (White 2013). | Has occurrence records in all Arizona counties (Natural Resources Conservation Service 2018a). | May occur<br>• San Pedro River<br>• Cave Creek<br>Sites contain disturbance or roads and are near to known occurrences (SEINet 2018).<br>Unlikely to occur<br>• Appleton Ranch parcels<br>• Tangle Creek<br>Sites are distant from known occurrences (SEINet 2018).<br>Unlikely to occur<br>• Dripping springs<br>• Turkey Creek<br>• Apache Leap South<br>• East Clear Creek<br>Sites are distant from known occurrences (SEINet 2018) and have limited disturbance. |
| Purple loosestrife | *Lythrum salicaria* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites in perennial and seasonal wetlands; occurs along marsh and pond edges, streambanks, canals, and ditches at elevations generally from 4,500–6,800 feet amsl (White 2013). | While the PLANTS database and SEINet show no occurrence records in Arizona (Natural Resources Conservation Service 2018a; SEINet 2018), other sources indicate occurrence records in on the Apache-Sitgreaves National Forests (Tonto National Forest 2018). | Unlikely to occur (all).<br>All parcels are distant to potential occurrences in Apache-Sitgreaves National Forests. |
| Purple starthistle | *Centaurea calcitrapa* | ADA | Occurs cultivated, disturbed, or degraded sites with fertile soil; occurs in meadows, grassland, woodland, and forest communities and along roadsides at elevations typically ranging from 3,300 to 8,000 feet amsl; germination occurs under a broad range of conditions with fewer viable seeds produced in dry years; plants seldom persist under shady conditions (White 2013). | Has occurrence records in Yuma County (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>All parcels are distant to known occurrence records (SEINet 2018) and do not occur in Yuma County. |
| Pyracantha | *Pyracantha* sp. | TNF | Not a common invasive in the desert Southwest; on the Tonto National Forest, occurred along Cave Creek (Tonto National Forest 2018). Drought resistant, common landscape plant; prefers dry soil and full sun (Dierking 1998). | Has occurrence records in Maricopa County (Natural Resources Conservation Service 2018a). On Tonto National Forest, occurred along Cave Creek (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>All Tonto National Forest parcels are distant from known occurrences (SEINet 2018; Tonto National Forest 2018) and this species is not a common invasive. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Quackgrass | *Elymus repens* | TNF<br>ADA | Occurs in disturbed or degraded sites within grasslands, woodlands, forest communities, or along roadsides at elevations between 6,700 and 8,500 feet amsl; is extremely drought tolerant (White 2013). | Has occurrence records in Coconino, Gila, and Navajo Counties (Natural Resources Conservation Service 2018a). Documented near Flagstaff, in Grand Canyon National Park, and on one site in Tonto National Forest, on Pleasant Valley Ranger District (Tonto National Forest 2018). | May occur<br>• East Clear Creek<br>Occurs near known occurrence (SEINet 2018) and is close to the usual elevational range.<br>Unlikely to occur<br>• San Pedro River<br>• Dripping Springs<br>• Appleton Ranch<br>• Turkey Creek<br>• Apache Leap<br>• Cave Creek<br>• Tangle Creek<br>Distant to known recent occurrences (SEINet 2018; Tonto National Forest 2018) and below typical elevational range. |
| Red brome | *Bromus rubens* | TNF | Occurs in cultivated, disturbed, or degraded sites along roadsides and in meadows, grassland, chaparral, woodland, and riparian communities, generally below 7,200 feet amsl elevation (White 2013). Red brome cannot withstand temperatures below freezing (Tonto National Forest 2018). | Has occurrence records in all Arizona counties, except Cochise, Greenlee, La Paz, Navajo, Santa Cruz, and Yuma (Natural Resources Conservation Service 2018a). Widespread on Tonto National Forest (Tonto National Forest 2018). | May occur (all Tonto National Forest parcels).<br>This species is widespread, occurs in a wide variety of habitats, and occurs within 2.5 miles of Cave Creek, Tangle Creek, and Apache Leap South, and approximately 6.5 miles of Turkey Creek (SEINet 2018). |
| Rescuegrass | *Bromus catharticus* | TNF | Occurs in cultivated, disturbed, or degraded soils along roadsides or within desert or semidesert communities generally below 4,500 feet amsl elevation; can tolerate both cold temperatures and drought conditions (White 2013). | Has occurrence records in all Arizona counties except Pinal and Greenlee (Natural Resources Conservation Service 2018a). Likely grows on Tonto National Forest; occurs at Montezuma Castle National Monument and in the Tucson Mountains (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>Unlikely to occur<br>• Apache Leap South<br>Is an occurrence within 3 miles of the (SEINet 2018) but disturbed areas do not occur.<br>Unlikely to occur<br>• Turkey Creek<br>• Tangle Creek<br>Sites do not contain desert or semidesert communities and are more than 15 miles from the nearest occurrence record (SEINet 2018). |
| Ripgut brome | *Bromus diandrus* | TNF | Occurs in cultivated, disturbed, or degraded sites along roadsides and within desert and semidesert communities, at elevations typically ranging from 3,200 to 4,600 feet amsl (White 2013). | Has occurrence records in Cochise, Coconino, Graham, Maricopa, Mohave, Pima, Pinal, and Yavapai Counties (Natural Resources Conservation Service 2018a). Occurs on National Monuments near Tonto National Forest, including Tuzigoot, Montezuma Castle, and Tonto National Monuments, and at the Hassayampa River Preserve; also occurs on the Verde where Highway 260 crosses, near the town of Strawberry, in the area of the Willow Fire of 2004 west of Rye, and at Sycamore Creek along the Beeline Highway (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>Although below typical elevational range, it contains desert or semidesert conditions with some road disturbance, and occurs within 3 miles of the nearest occurrence record (SEINet 2018).<br>Unlikely to occur<br>• Apache Leap South<br>There is an occurrence within 3 miles (SEINet 2018) but disturbed areas do not occur.<br>Unlikely to occur<br>• Turkey Creek<br>• Tangle Creek<br>Sites do not contain desert or semi-desert communities and are more than 6 miles from the nearest occurrence record (SEINet 2018). |
| Rush skeleton weed | *Chondrilla juncea* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within grassland and woodland communities; prefers well-drained sandy or gravely soils below 5,500 feet amsl (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Russian knapweed | *Acroptilon repens* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within meadows, grassland, and riparian communities at elevations ranging from 3,000 to 8,000 feet amsl; found in variety of soil types; is a very competitive and aggressive species (White 2013). | Has occurrence records in Apache, Cochise, Greenlee, Maricopa, Navajo, Pima, and Yavapai Counties (Natural Resources Conservation Service 2018a). Documented in vicinity of Gordon Canyon on State Route 260 and at Shumway Millsite on Payson Ranger District, south of Payson (Tonto National Forest 2018). | May occur<br>• Turkey Creek<br>• East Clear Creek<br>Sites are within the usual elevational range, contain some disturbance, and are in the vicinity of known occurrences (SEINet 2018; Tonto National Forest 2018).<br>Unlikely to occur<br>• Cave Creek<br>• Tangle Creek<br>• Apache Leap<br>• Dripping Springs<br>Sites are more than 20 miles from nearest known occurrence (SEINet 2018) and have minimal disturbance.<br>Unlikely to occur<br>• Appleton Ranch parcels<br>• San Pedro River<br>Nearest known infestation is at least 20 miles (SEINet 2018). |
| Russian olive | *Elaeagnus angustifolia* | TNF | Seedlings tolerant of shade, thrives in a variety of soil and moisture conditions, including bare mineral substrates; found in open areas, grasslands, streambanks, lakeshores, roadsides, and urban areas (U.S. Forest Service 2018d). Typically occurs at elevations ranging from 4,000 to 7,500 feet amsl; can dominate riparian vegetation where overstory cottonwood (*Populus* spp.) have died (White 2013). | Has occurrence records in Apache, Coconino, and Navajo Counties (Natural Resources Conservation Service 2018a). | Unlikely to occur (all Tonto National Forest parcels).<br>Distant from known occurrences (SEINet 2018). In addition, Tangle Creek and Cave Creek are below the typical elevational range, and Apache Leap South does not contain suitable habitat. |
| Russian thistle | *Salsola kali* and *S. tragus* | TNF | *Salsola* spp. occurs on cultivated, disturbed, or degraded sites along roadsides and within grassland and woodland communities; can occur on any type of well-drained uncompacted soil, but is most frequently found in alkaline or saline soil below 8,500 feet amsl; burns easily owing to plant structure (White 2013). | *Salsola* spp. has occurrence records in all Arizona counties (Natural Resources Conservation Service 2018a). | May occur<br>• Cave Creek<br>• Tangle Creek<br>• Turkey Creek<br>• Apache Leap South<br>This species is widespread in the vicinity of the parcels (SEINet 2018). |
| Saltcedar | *Tamarix ramosissima* | TNF | *Tamarix* spp. occur in moist meadow and riparian communities, in drainage washes of both natural and artificial water bodies, and in other areas where seedlings can be exposed to extended periods of saturated soil conditions; can grow on saline soils with up to 15,000 ppm soluble salt; occurs below 7,500 feet amsl elevation (White 2013). | Has occurrence records in Mohave and Pima Counties (Natural Resources Conservation Service 2018a).<br>On Tonto National Forest, saltcedar occurs along the Verde River and its tributaries; along much of the Salt River; and along Salt and Verde River reservoirs (Tonto National Forest 2018). | May occur<br>• Cave Creek<br>• Tangle Creek<br>• Turkey Creek<br>This species occurs approximately 3 miles south of the Cave Creek (SEINet 2018). May occur at Tangle Creek and Turkey Creek, if sufficient water occurs.<br>Unlikely to occur<br>• Apache Leap South<br>Lacks riparian habitat or roadsides. |
| Scotch thistle | *Onopordum acanthium* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded moist sites within meadows, grassland, woodland, and riparian communities, typically below 7,500 feet amsl; can germinate year-round (White 2013). | Has occurrence records in Apache, Navajo, and Yavapai Counties (Natural Resources Conservation Service 2018a). Common in Four Corners area, the Arizona Strip, and along Interstate system near Flagstaff; observed on Tonto National Forest growing in Strawberry at State Route 87 bridge (Tonto National Forest 2018). | May occur<br>• East Clear Creek.<br>This site is in the vicinity of known occurrences (SEINet 2018; Tonto National Forest 2018) and occurs along State Route 87, and contains riparian areas with some disturbance.<br>Unlikely to occur.<br>• Cave Creek<br>• Tangle Creek<br>• Turkey Creek<br>• San Pedro River<br>• Appleton Ranch<br>• Apache Leap South<br>• Dripping Springs<br>Sites are distant to known occurrences of this species (SEINet 2018; Tonto National Forest 2018), and some parcels contain minimal disturbance. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Serrated tussock | *Nassella trichotoma* | Federal<br>ADA | Grows in a wide range of climatic conditions and soil types, being able to tolerate floods, drought, exposure to salt and repeated frost (CABI 2018). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Siberian elm | *Ulmus pumila* | TNF | In Arizona, this species is found in forested areas and high elevations (U.S. Forest Service 2018d). Occurs in cultivated, disturbed, or degraded sites along roadsides and within meadow, grassland, woodland, and riparian communities in well-drained soils, typically below 8,100 feet amsl elevation (White 2013). | Has occurrence records in Apache, Maricopa, and Navajo Counties (Natural Resources Conservation Service 2018a). Isolated records from Coconino National Forest east of Flagstaff and in Verde River/Lynx Lake/Thumb Butte areas of Prescott National Forest (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>Nearest known occurrences are at least 20 miles from parcels (SEINet 2018). |
| Sicilian starthistle | *Centaurea sulphurea* | ADA | Occurs in cultivated, disturbed, or degraded sites along roadsides and within grassland and woodland communities at elevations typically below 3,300 feet amsl (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Smallflower tamarisk | *Tamarix parviflora* | TNF | Riparian habitats, along permanent or intermittent streams, lakes, and reservoirs; can grow in a wide variety of soils, and can tolerate salinity (CABI 2018). | Has occurrence records in Arizona but not county-specific records (Natural Resources Conservation Service 2018a). On Tonto National Forest, *Tamarix* spp. occur along the Verde River and its tributaries; along much of the Salt River; and along Salt and Verde River reservoirs (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>This species has no occurrence records in the vicinity of the parcels (SEINet 2018; Tonto National Forest 2018). |
| Southern sandbur | *Cenchrus echinatus* | TNF<br>ADA | Occurs in cultivated, disturbed, or degraded sites that contain sandy or gravelly conditions; is an aggressive colonizer with rapid growth under moist conditions; usually occurs at elevations between 3,500 to 4,500 feet amsl (White 2013). | Has occurrence records in Cochise, Maricopa, Pima, and Yuma Counties (Natural Resources Conservation Service 2018a). Occurs east of Tonto National Forest on the Fort Apache Reservation along the right-of-way for Highway 60 east; occurs on Tonto National Forest on right-of-way of State Route 188, a few miles north of Globe, Arizona (Tonto National Forest 2018). | Unlikely to occur<br>• Dripping Springs<br>• Appleton Ranch parcels<br>Distant from known occurrences (SEINet 2018).<br>Unlikely to occur.<br>• Cave Creek<br>• Tangle Creek<br>• East Clear Creek<br>• Turkey Creek<br>• Apache Leap South<br>• San Pedro River<br>Distant from known occurrences (SEINet 2018); and outside the typical elevational range. |
| Spotted knapweed | *Centaurea biebersteinii* | TNF | Found at elevations from sea level to 10,000 feet amsl in areas receiving 8 to 80 inches of rain a year; prefers well-drained light-textured soils that receive summer rain in a wide variety of open forest, prairie, and rangelands; disturbance promotes rapid establishment and spread (U.S. Forest Service 2018d). | While the PLANTS database shows occurrence records only in Santa Cruz County (Natural Resources Conservation Service 2018a), other sources indicate occurrence records along Highways 89A and 179 in Sedona, on Northern Arizona University campus, along Lake Mary Road and in the vicinity of Prescott; also north of Grand Canyon in the Arizona Strip, and north of Tonto National Forest above the Mogollon Rim; with an unconfirmed report on the Pleasant Valley Ranger District (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>All Tonto National Forest parcels are distant from known occurrences of this species (SEINet 2018; Tonto National Forest 2018). |
| Squarrose knapweed | *Centaurea squarrosa* | ADA | Found on cultivated, disturbed, or degraded rangelands and roadsides, typically below 8,000 feet amsl elevation; is an aggressive, competitive plant; germination can occur under a broad range of environmental conditions (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Sulfur cinquefoil | *Potentilla recta* | TNF | Associated with roadsides, disturbed areas, abandoned agricultural fields, and waste areas within grasslands, shrublands, and open-canopy forests; intolerant of complete shade (Zouhar 2003). | While the USDA PLANTS database shows no occurrence records in Arizona, other sources indicate occurrence records along the Rio de Flag and on the Lake Mary Road on Coconino National Forest (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>The nearest known occurrences are more than 30 miles from the parcels (SEINet 2018). |
| Swamp morning-glory | *Ipomoea aquatica* | Federal<br>ADA | Occurs in moist, marshy, or inundated localities, in shallow pools, ditches, or wet rice fields at elevations between sea level and 3,200 feet amsl (CABI 2018). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Sweet resinbush | *Euryops subcarnosus* | TNF | In Arizona, occurs in semiarid grassland, desert grassland, desert shrub, and desert scrub communities below the Mogollon Rim (White 2013). | Has occurrence records in Graham, Pima, and Yavapai Counties (Natural Resources Conservation Service 2018a). Occurs on Fry Mesa south of Safford, on the Santa Rita Experimental Range, and several small patches south of the Globe Ranger Station; west of Highway 188 in Tonto Basin, north of Highway 60, north of the Miami cemetery; and east of cemetery and 2 miles down Bloody Tanks Wash toward Miami (Tonto National Forest 2018). | May occur<br>• Apache Leap South<br>• Tangle Creek<br>• Cave Creek<br>The sites are in the vicinity of known occurrences (Tonto National Forest 2018) and contain some desertscrub or semidesert grassland biotic communities.<br>Unlikely to occur<br>• Turkey Creek<br>Does not contain suitable habitat. |
| Tansy ragwort [stinking willie] | *Senecio jacobaea* | ADA | Occurs in cultivated, disturbed, or degraded moist sites along roadsides or within meadows, grassland, woodland, and riparian communities; prefers light, well-drained soils at elevations typically below 4,900 feet amsl; this aggressive species is highly poisonous to livestock (White 2013). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Texas blueweed | *Helianthus ciliaris* | ADA | Occurs in cultivated, disturbed, or degraded moist open sites along roadsides and within meadows, grassland, woodland, forest, and riparian communities; prefers alkaline or saline soils at elevations ranging from 3,000 to 8,500 feet amsl; thrives in heavily disturbed and cultivated areas (White 2013). | Has occurrence records in Cochise, Gila, Graham, and Pinal Counties (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>All sites are at least 10 miles away from nearest known occurrence (SEINet 2018) and no site contains heavily disturbed areas except San Pedro River parcel, which is below the typical elevational range for this species. |
| Three-lobed morning-glory | *Ipomoea triloba* | ADA | Occurs in cultivated fields, sandy ground, and grassy swamp margins on hedges, in thickets; low to middle elevations (CABI 2018). | The PLANTS database shows no occurrence records in Arizona (Natural Resources Conservation Service 2018a). SEINet (2018) has two records from Arizona, in 1930. | Unlikely to occur (all).<br>This species has no recent records in Arizona. |
| Torpedo grass | *Panicum repens* | ADA | Occurs in wet places, along the edges of rivers, irrigation channels, and lakes, but does not tolerate long-term submergence; can occur in a variety of soils, sandy to heavy (CABI 2018). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Tree of heaven | *Ailanthus altissima* | TNF | Widely distributed in fields, roadsides, fencerows, woodland edges, and forest openings (U.S. Forest Service 2018d). Generally, occurs below 6,200 feet amsl (White 2013). | Has occurrence records in Cochise, Coconino Gila, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties (Natural Resources Conservation Service 2018a). Occurrences around Cottonwood, Camp Verde, and Jerome; on Coronado National Forest lands; in Tonto National Forest on Verde River near Childs; in Superior and Globe and on National Forest lands nearby; near confluence of Pinal Creek and Salt River; and Payson (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>These parcels are distant from known occurrences (SEINet 2018; Tonto National Forest 2018) and do not contain suitable open, disturbed habitat. |
| Tropical soda apple | *Solanum viarum* | Federal<br>ADA | Occurs in areas that have been frequented by animals or that have received natural materials contaminated by seed, including pasturelands, roadsides, or cattle yards (U.S. Forest Service 2018d). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Water-chestnut | *Trapa natans* | ADA | Prefers full sun, and low-energy, nutrient-rich waters; prefers slightly acidic water (CABI 2018). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Weeping lovegrass | *Eragrostis curvula* | TNF | Occurs in cultivated, disturbed, or degraded areas along roadsides or within meadows, grasslands, and at the margins of chaparral, woodland, and forest communities, generally at elevations between 6,000 and 8,000 feet amsl; this species has high potential for establishment on burned sites (White 2013). | Has occurrence records in Cochise, Coconino, Gila, Graham, Maricopa, Pima, and Yavapai Counties (Natural Resources Conservation Service 2018a). Within Tonto National Forest, seeded extensively along highways, power line corridors, and after fires; seeded in Pinal Mountains after a fire (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>None of the parcels contain meadow, grassland, or roadside habitat, and none are above the 6,000 feet amsl elevation typical of this species. |
| White bietou | *Dimorphotheca cuneata* | TNF | On the Tonto National Forest, occurs in yards and canyons between Six Shooter Canyon and National Forest lands to the west; no other records of this species being invasive in the United States (Tonto National Forest 2018). | Occurs in an approximately 40-acre patch on the Tonto National Forest between Six Shooter Canyon and National Forest land to the west (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>The only known infestation of this species (SEINet 2018; Tonto National Forest 2018) is distant from all Tonto National Forest parcels. |
| Wild mustard | *Sinapis arvensis* | TNF | Occurs in dry, disturbed sites, including waste places, pastures, roadsides, and railroad rights-of-way, generally below 6,000 feet amsl elevation (White 2013). | Has occurrence records in Gila, Maricopa, Pima, and Pinal Counties (Natural Resources Conservation Service 2018a). Occurs along State Route 188 from Punkin Center to Roosevelt, on private lands; is common on Agua Fria National Monument, west of Perry Mesa tobosa grassland in Cave Creek Ranger District (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>The known occurrences of this species (SEINet 2018; Tonto National Forest 2018) are distant from all Tonto National Forest parcels. |

| Common Name | Scientific Name | Status | Habitat Components (Elevation, Soils, Veg Association, Slope, Aspect, etc.) | Geographical Range in Arizona | Likelihood of Occurrence |
|---|---|---|---|---|---|
| Wild oats | *Avena fatua* | TNF | Occurs in cultivated, disturbed, or degraded areas along roadsides and within desert, semidesert grasslands, and woodland communities, typically at elevations between 2,500 and 7,200 feet amsl (White 2013). | Has occurrence records in all Arizona counties except Graham, Greenlee, La Paz, Navajo, Santa Cruz, and Yuma (Natural Resources Conservation Service 2018a). Found along most highways in Tonto National Forest (Tonto National Forest 2018). | May occur (all Tonto National Forest parcels).<br>Extremely widespread on the Tonto National Forest, and occurs in the vicinity of all Tonto National Forest parcels (SEINet 2018; Tonto National Forest 2018). |
| Witchweed | *Striga spp.* | Federal<br>ADA | Parasitic plant that attacks agricultural crops (Natural Resources Conservation Service 2018a). | No occurrence records in Arizona (Natural Resources Conservation Service 2018a). | Unlikely to occur (all).<br>This species is not known to occur in Arizona. |
| Yellow starthistle | *Centaurea solstitialis* | TNF<br>ADA | Prefers full sunlight and deep, well-drained soils where rainfall is 10–60 inches per year; most commonly occurs in disturbed areas (U.S. Forest Service 2018d). Generally occurs below 8,200 feet amsl elevation (White 2013). | Although the USDA PLANTS database only shows occurrence records in Yuma County (Natural Resources Conservation Service 2018a), other sources indicate that this species has become established in central Arizona, within the communities of Flagstaff, Camp Verde, Payson, Star Valley, and Young; on Tonto National Forest, this species occurs mainly on the higher-elevation districts (Payson and Pleasant Valley) but has been documented in the Tonto Basin below 3,000 feet amsl elevation (Tonto National Forest 2018). | May occur<br>• Clear Creek<br>• Turkey Creek<br>• Cave Creek<br>• Tangle Creek<br>Occurrences in the vicinity (SEINet 2018; Tonto National Forest 2018), disturbance from dirt roads on-site.<br>Unlikely to occur<br>• Apache Leap South<br>• Dripping Springs<br>Distant from nearest known occurrence (SEINet 2018; Tonto National Forest 2018), minimal disturbance on site.<br>Unlikely to occur<br>• Appleton Ranch parcels<br>• San Pedro River<br>Distant from nearest known occurrence (SEINet 2018; Tonto National Forest 2018). |
| Yellow sweetclover | *Melilotus officinalis* | TNF | Occurs in cultivated, disturbed, or degraded areas along roadsides and within meadows, grassland, woodland, and forest communities at elevations typically ranging from 5,000 to 10,500 feet amsl (White 2013). | Has occurrence records in all Arizona counties except Greenlee, La Paz, Mohave, and Yuma (Natural Resources Conservation Service 2018a). This species is widespread in Arizona, and very common in riparian zones of the Tonto National Forest along the Verde River and on the Cave Creek Ranger District (Tonto National Forest 2018). | Unlikely to occur (all Tonto National Forest parcels).<br>Apache Leap South, Cave Creek, and Tangle Creek are below the typical elevational range of this species, and Turkey Creek contains minimal disturbance and is 7 miles northwest of the nearest occurrence record (SEINet 2018). |
| Yellow toadflax | *Linaria vulgaris* | TNF | Occurs in cultivated, disturbed, or degraded areas along roadsides and within meadows, grassland, woodland, and riparian communities at elevations typically ranging from 6,400 to 9,200 feet amsl; germination highest on open sites with compacted soils and little vegetation (White 2013). | Has occurrence records in Coconino County (Natural Resources Conservation Service 2018a). | Unlikely to occur (all Tonto National Forest parcels).<br>Known records are distant from all Tonto National Forest parcels (SEINet 2018) and all of the sites are below the typical elevational range of this species. |