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APPENDIX E:
SPECIES ACCOUNTS FOR SPECIES LISTED UNDER
THE ENDANGERED SPECIES ACT

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APPENDIX E:**SPECIES ACCOUNTS FOR SPECIES LISTED UNDER
THE ENDANGERED SPECIES ACT**

This section presents information on all species listed under the Endangered Species Act (ESA), including those that are proposed or are candidates for listing and that may occur in the region of the U.S. Department of Energy (DOE) Uranium Leasing Program (ULP) lease tracts. Species accounts are presented for those species that may occur in the affected area of one or more of the lease tracts. The species accounts include information on the life history, ecology, listing history, and threats to conservation for each species. Species accounts are presented by taxonomic group (plants, invertebrates, fish, amphibians, reptiles, birds, and mammals) and alphabetically, by common name, within each taxonomic group.

E.1 PLANTS**E.1.1 Clay-Loving Wild Buckwheat**

The clay-loving wild buckwheat (*Eriogonum pelinophilum*) is a long-lived, low-growing (only 5–10 cm high), rounded subshrub that has dark green, inrolled leaves that are needlelike in appearance and clusters of white- to cream-colored flowers. It is pollinated by more than 50 species, including native bees and ants. Flowering occurs from late May to early September, and individual flowers only last for fewer than 3 days (USFWS 2009a).

The clay-loving wild buckwheat is endemic to the rolling clay hills and flats next to Delta and Montrose, Colorado. It grows in whitish, alkaline, clay soils of the Mancos shale formation that are relatively barren of vegetation at elevations ranging from 5,180 to 6,446 ft (1,579 to 1,965 m). It occurs in the greatest density and frequency away from other shrubs. It is found within swales or drainages that are moister than surrounding areas. Plants sometimes associated with the clay-loving wild buckwheat include mat saltbrush, black sagebrush, shadscale, and Gardner's saltbrush (USFWS 2009a).

The clay-loving wild buckwheat was listed as endangered on July 13, 1984; approximately 120 acres (48.6 ha) in Delta County, Colorado, were also designated as critical habitat on that date (USFWS 1984). The current range of the clay-loving wild buckwheat is roughly 576 acres (233 ha) (USFWS 2009a). The size of the current clay-loving wild buckwheat population is roughly 278,000 individual plants (USFWS 2009a).

The greatest threat to the clay-loving wild buckwheat is habitat loss and fragmentation from urban development (NatureServe 2012). Potential threats that may be associated with ULP activities include surface disturbance from the construction of facilities and roads, as well as from increased vehicle traffic and human presence. Other threats include agricultural

1 development, non-native invasive plants, livestock use, oil and gas development, and herbicide
2 use (USFWS 2009a).

5 **E.1.2 Colorado Hookless Cactus**

7 The Colorado hookless cactus (*Sclerocactus glaucus*) was previously part of a larger
8 complex of *S. glaucus*; however, this complex was split into three distinct species in 2009. All
9 three species are listed as threatened under the ESA (USFWS 2009b). The Colorado hookless
10 cactus is a barrel-shaped cactus that ranges from 1.2 to 4.8 in. (3.0 to 12.2 cm) tall. The stem is
11 ribbed with hooked spines radiating out from areoles along the ribs. It produces pink to violet
12 bell or funnel-shaped flowers and short barrel-shaped fruit from April to May (USFWS 2010a).
13 After blooming, the cactus may shrink below the ground or become a dull grayish-green color,
14 making the plant very hard to identify.

16 The Colorado hookless cactus is endemic to western Colorado in Delta, Montrose, Mesa,
17 and Garfield Counties. Its range is estimated to be around 1,700 to 2,099 mi² (2,736 to
18 3,378 km²) (USFWS 2010a; NatureServe 2012). The total known population is estimated to
19 consist of more than 19,000 plants (USFWS 2010a). There are currently two population centers
20 of the Colorado hookless cactus that may be morphologically and genetically distinct. The two
21 populations are on the alluvial river terraces of (1) the Gunnison River and (2) the Colorado
22 River, and in the Plateau and Roan Creek drainages (CNHP 2011; USFWS 2011a). The species
23 does not occur in the vicinity of any of the ULP lease tracts.

26 Populations are most often found on alluvial benches along the Colorado and Gunnison
27 Rivers and their tributaries at elevations ranging from 3,937–6,562 ft (1,200–2,000 m). The
28 Colorado hookless cactus prefers gravelly or rocky surfaces on river terrace deposits and lower
29 mesa slopes (NatureServe 2011). It is more abundant on south-facing slopes. Populations have
30 also been found in big sagebrush-dominated sites and in transition zones from sagebrush to
31 piñon-juniper communities (USFWS 2011a).

33 The Colorado hookless cactus was listed as threatened on November 13, 1979
34 (USFWS 1979). A recovery plan for the Colorado hookless cactus was created on April 14, 2010
35 (USFWS 2010a) that identified the following recovery needs: (1) surveying to document
36 populations and suitable habitat accurately; (2) protecting and restoring habitat and corridors to
37 provide connectivity; and (3) protecting individual plants from direct and indirect threats.

39 A number of threats to the Colorado hookless cactus have been identified. Some of the
40 threats could be associated with mining activities. These include surface disturbance from the
41 construction of facilities and roads, as well as from increased vehicle traffic and human presence.
42 Activities associated with mining can fragment and destroy the Colorado hookless cactus's
43 habitat. Roads and associated infrastructure can disturb individual plants and habitat. The
44 potential increase in the use of access roads by off-road vehicles increases erosion, fugitive dust,
45 soil compaction, and sedimentation and it can crush the cacti. Dust accumulation on the cacti can
lead to a decrease in plant growth and water use efficiency. Increased erosion, soil compaction,

1 and sedimentation can kill the cacti. An increase in human presence could lead to the illegal
2 collection and loss of individual plants. Additional threats to the Colorado hookless cactus
3 include livestock grazing, which occurs on 94% of the potential habitat of the Colorado hookless
4 cactus, as well as competition with invasive weed species (USFWS 2010a). However, the
5 Colorado hookless cactus does not occur in the vicinity of the ULP lease tracts; therefore, no
6 impacts to this species from ULP activities are expected.
7
8

9 **E.1.3 Debeque Phacelia**

10
11 The Debeque phacelia (*Phacelia submutica*) is a low-growing annual herb with small
12 white, tube-shaped flowers hidden within its leaves (USFWS 2011b). Stems are usually 0.8 to
13 3 in. (2.0 to 7.6 cm) long and are deep red and covered in stiff hairs. Leaves are also covered
14 with stiff hairs, are reddish when mature, and are egg shaped. The Debeque phacelia shows
15 yearly variation in its abundance as a result of environmental factors, such that in one year, no
16 plants may grow and yet thousands may grow the next. Seeds can remain dormant for up to
17 five years. The plant flowers between late April and late June and sets seed from mid-May
18 through late June (USFWS 2011b).
19

20 Habitat requirements of the Debeque phacelia include clay soils from the Atwell Gulch
21 and Shire members of the Wasatch Formation with little other vegetation (generally less than
22 10% plant coverage) at elevations ranging from 5,080 to 7,100 ft (1,548 to 2,164 m). The shrink–
23 swell action of clay soils are essential to the species, because seed banks are maintained in cracks
24 formed in the soil. It has been associated with other plants including cheatgrass, pointed
25 gumweed, Gordon’s buckwheat, Nuttall’s poverty weed, and tufted evening primrose. Although
26 it can be found on slopes ranging from flat to 42 degrees, it is generally found on moderately
27 steep slopes, benches, and ridge tops that are adjacent to valley floors (USFWS 2011b).
28

29 The Debeque phacelia was listed as threatened on August 26, 2011 (USFWS 2011c);
30 24,987 acres (10,112 ha) were proposed as critical habitat in Mesa and Garfield counties in
31 Colorado on July 27, 2011 (USFWS 2011b). There are currently nine known populations of the
32 Debeque phacelia. It is estimated that the current population size may be as large as 68,000 when
33 climatic conditions are favorable (USFWS 2011b). The estimated total number of plants ranges
34 from 7,767 to 68,371 per year (USFWS 2011c). The current range of the Debeque phacelia is
35 centered in De Beque, Colorado, in Mesa and Garfield counties. A polygon around all nine
36 populations of the Debeque phacelia covers 86,230 acres (34,896 ha), within which 625.2 acres
37 (253.3 ha) are actually occupied by the plants (USFWS 2011b).
38

39 Potential threats to the Debeque phacelia that may be associated with ULP activities
40 include surface disturbance from the construction of facilities and roads, as well as from
41 increased vehicle traffic and human presence. The disturbance of seed banks from within the soil
42 would be detrimental to the Debeque phacelia (NatureServe 2012). Other threats include
43 livestock grazing and oil and gas development (USFWS 2011c).
44
45

1 E.2 INSECTS

4 E.2.1 Uncompahgre Fritillary Butterfly

6 The Uncompahgre fritillary butterfly (*Boloria acrocne*) is an insect that has a
7 wingspan of 0.8 to 1.2 in. (2 to 3 cm). Males have rusty brown wings with crisscrossed black
8 bars. Females have lighter wings. The hind wing has a white jagged bar dividing the brown inner
9 half and the purple-grey outer surface. The body is brownish black. Females lay eggs on snow
10 willow, and the larvae feed on that plant. Adults consume nectar from a range of flowering
11 alpine plants. The butterfly has a biennial life history where eggs laid in one year will be
12 caterpillars the following year and would mature into adults the following year. Adults live only
13 one to two weeks (USFWS 2011d).

15 Habitat requirements for this species include the snow willow (*Salix nivalis*) for food and
16 shelter at elevations above 12,402 ft (3,780 m) on northeast-facing Alpine slopes in the San Juan
17 Mountains of southwestern Colorado (USFWS 2011d; NatureServe 2012). These habitats do not
18 occur in the vicinity of the ULP lease tracts.

20 The Uncompahgre fritillary butterfly was listed as an endangered species on June 24,
21 1991 (USFWS 1991a). A recovery plan was finalized on March 17, 1994 (USFWS 1994a).
22 Currently, 11 known colonies of the butterfly exist (USFWS 2009c). Only 3 of those colonies are
23 monitored, and the current population size of those colonies is estimated to be between 3,400 and
24 23,000 (USFWS 2011d). The overall population size is currently unknown. The current range is
25 estimated to be 62 to 155 mi² (100 to 250 km²) (NatureServe 2012).

27 The only current threats to the Uncompahgre fritillary butterfly are minor and include
28 collection by people and habitat degradation from the widening of hiking trails and from sheep
29 grazing (USFWS 2011d). Potential threats that may be associated with mining activities include
30 habitat disturbance from the construction of facilities and roads, as well as from increased
31 vehicle traffic and human presence. However, the Uncompahgre fritillary butterfly does not
32 occur in the vicinity of the ULP lease tracts; therefore, no impacts to this species from ULP
33 activities are expected.

36 E.3 FISH

39 E.3.1 Bonytail Chub

41 The bonytail chub (*Gila elegans*) is a species of fish in the family *Cyprinidae*. It is
42 endemic to the Colorado River Basin. This species has a very slender, round, and long caudal
43 peduncle; a subterminal mouth; and fins that are large and falcate. Adults have a relatively-flat,
44 concave head and a smooth dorsal hump and back. Young fish are typically silver-gray with
45 white bellies. Adults have a dark olive back that contains small iridescent highlights

1 (Mueller 2006). Adults grow to be about 21.6 in. (55 cm) in length and weigh 2.4 lb (1.1 kg)
2 (USFWS 2002a). Hatchery-reared bonytail chub become sexually mature after two years
3 (NatureServe 2012). Although the diet of the bonytail chub is unknown, it is hypothesized that
4 they eat insects, fishes, and plants (NatureServe 2012).
5

6 The historic range of the bonytail chub is unknown because it was extirpated from many
7 areas before surveys were conducted; however, it was common in the warm-water reaches of
8 larger rivers from Mexico to Wyoming (USFWS 2002a). Currently, no self-sustaining
9 populations of bonytail chub exist in the wild; only a small number of adults exist in the wild in
10 Lake Mohave, Lake Havasu, in the Green River, and in the upper Colorado River subbasins
11 (USFWS 2002a). The current population size is estimated to be between 1 and 1000 individuals
12 (NatureServe 2012). Although hatchery-reared adults have been released into rivers in the upper
13 basin, results indicate a low survival rate and no reproduction or recruitment (USFWS 2002a).
14

15 In addition, while the habitat requirements of the bonytail chub are uncertain, it has been
16 observed in pools and eddies on main stem rivers. Habitats necessary for conservation of the
17 bonytail chub include river channels and flooded, ponded, or inundated riverine habitats
18 (USFWS 2002a). Bonytail chubs in rivers probably spawn in spring over rocky substrates and
19 spawning in reservoirs has been observed over rocky shoals and shorelines (USFWS 2002a).
20 Spawning was observed to occur in June and July at water temperatures of about 64°F (18°C)
21 (USFWS 1994b). It is hypothesized that flooded bottomland habitats are important as nursery
22 habitats for the young bonytail chub (USFWS 2002a).
23

24 The bonytail chub was listed as an endangered species on April 23, 1980 (USFWS 1980).
25 Approximately 312 mi (502 km) of river in the Colorado River Basin were designated as critical
26 habitat for the bonytail chub on March 21, 1994. The critical habitat spans five states and
27 includes portions of the Colorado, Green, and Yampa Rivers in the Upper Basin and the
28 Colorado River in the Lower Basin (USFWS 1994b). A recovery plan was approved on
29 August 1, 2002 (USFWS 2002a).
30

31 Potential threats to the bonytail chub that may be associated with ULP activities include
32 impacts to water quality and water withdrawals. Uranium mining can contaminate surrounding
33 water with high levels of ammonia and uranium, which can bioaccumulate in fish species
34 (Karp and Metzler 2006; Fresques 2008; Metzler et al. 2008). The toxicity of uranium mine
35 tailings has been shown to be devastating to aquatic life in the Colorado River system
36 (USFWS 1990). The effects of ammonium include reduced growth rate, reduced gamete
37 production, body deformities and malformations, and degenerative gill and kidney appearance
38 and function. Mining activities may also increase the amount of sediment in the river
39 (Leyda 2011). A catastrophic tailings pile failure could bury important nursery areas and destroy
40 other fish habitat. Water depletions associated with uranium mining might contribute to the
41 destruction or adverse modification of designated critical habitat for the bonytail chub
42 (USFWS 2011e). Other threats include stream alteration, competition with and predation by
43 introduced species, and pollution.
44
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1 E.3.2 Colorado Pikeminnow

2
3 The Colorado pikeminnow (*Ptychocheilus lucius*) is a species of fish in the family
4 *Cyprinidae*. It is a long-distance migrator (average of 409 mi [658 km]) that reaches a maximum
5 length of 5.9 ft (1.8 m) and a weight of 79 lb (36 kg) and it can live for more than 40 years
6 (USFWS 2002b). It is an elongated fish with a greenish, slender body with gold flecks on the
7 dorsal surface. The mouth is large and nearly horizontal, with slender teeth (USFWS 2007).
8 Reproduction occurs after five to seven years (NatureServe 2012). Juveniles feed mainly on
9 zooplankton and insect larvae; the larger fish (greater than 4 in. [10 cm]) feed mainly on other
10 fish (USFWS 2007; NatureServe 2012). Spawning occurs in river canyons when water flows
11 decline from June to August and when water temperatures are between 64°F and 73°F (18°C and
12 23°C) (USFWS 1994b, 2002b). The optimal temperature for egg hatching is 68°F (20°C)
13 (NatureServe 2012). Adult habitats after spawning include pools, deep runs, and eddies
14 maintained by high spring flows. Larvae drift downstream to nutrient-rich nursery backwaters
15 (USFWS 2002b). Young of the year prefer shallow, ephemeral backwaters along the shore with
16 little or no current and silt or sand substrates (NatureServe 2012; USFWS 2007). When juveniles
17 reach about 8 in. (20 cm) in length, they prefer deeper water with a faster velocity
18 (USFWS 2007). During the winter, adults are most common in shallow, ice-covered shorelines
19 (USFWS 1994b). Temperature tolerances range from less than 50°F to 95°F (10°C to 35°C)
20 (USFWS 2007).

21
22 The Colorado pikeminnow is endemic to the Colorado River Basin. Although it was
23 extirpated from the Lower Basin in the 1970s, experimental introductions have been made into
24 the Verde River since the 1980s. Currently, three wild, reproducing populations occur in the
25 Green River, San Juan River, and upper Colorado River subbasins. Current population estimates
26 are 6,600 to 8,900 total for the three populations (6,000 to 8,000 in the Green River; 600 to
27 900 in the upper Colorado River; and 19 to 50 in the San Juan River) (USFWS 2002b).

28
29 The Colorado pikeminnow was listed as an endangered species on March 11, 1967.
30 Approximately 1,148 mi (1,848 km) of river in the Colorado River Basin were designated as
31 critical habitat for the Colorado pikeminnow on March 21, 1994. The critical habitat spans
32 three states and includes portions of the Colorado, Green, Yampa, White, and San Juan Rivers in
33 the Upper Basin (USFWS 1994b). An original recovery plan was approved on August 28, 2002,
34 and the current recovery goals were approved on July 27, 2006 (USFWS 2002b).

35
36 Potential threats to the Colorado pikeminnow that may be associated with ULP activities
37 include impacts to water quality and water withdrawals. Uranium mining can contaminate
38 surrounding water with high levels of ammonia and uranium, which can bioaccumulate in fish
39 species (Karp and Metzler 2006; Fresques 2008; Metzler et al. 2008). The toxicity of uranium
40 mine tailings has been shown to be devastating to aquatic life in the Colorado River system
41 (USFWS 1990). The effects of ammonium include reduced growth rate, reduced gamete
42 production, body deformities and malformations, and degenerative gill and kidney appearance
43 and function. Mining activities may also increase the amount of sediment in the river
44 (Leyda 2011). A catastrophic tailings pile failure could bury important nursery areas and destroy
45 other fish habitat (USFWS 2002b). Water depletions associated with uranium mining may

1 contribute to the destruction or adverse modification of designated critical habitat for the
2 Colorado pikeminnow (USFWS 2011e). Other threats include stream alteration from dams,
3 competition with and predation by introduced species, and pollution.
4
5

6 **E.3.3 Greenback Cutthroat Trout**

7

8 The greenback cutthroat trout (*Oncorhynchus clarki* ssp. *stomias*) is a species of fish in
9 the family *Salmonidae*. It is one of the most colorful subspecies of cutthroat trout
10 (USFWS 1998). This species is characterized by dark, round spots on the sides and tail and two
11 colorful blood-red stripes on each side of the throat under the jaw (USFWS 2011f). Mature males
12 have crimson red along the ventral region during spawning season (USFWS 1998). The diet of
13 the greenback cutthroat trout includes mainly aquatic and terrestrial insects, but they are also
14 opportunistic feeders (USFWS 2009d; Coleman 2007). Males spawn at age two and females
15 reach sexual maturity when they reach a length of about 7 in. (18 cm) (usually after their third or
16 fourth summer) (USFWS 2011f; Coleman 2007). They spawn in spring or early summer
17 depending on the elevation. Females dig redds in the gravel bed of streams where they deposit
18 eggs. Spawning occurs when water reaches about 41°F to 46°F (5°C to 8°C) (Coleman 2007).
19 Larger females can lay up to 6,000 eggs (USFWS 2009d).
20

21 Although the historic range of the greenback cutthroat trout is not known, it is
22 hypothesized that all mountain and foothill habitats of the South Platte and Arkansas River
23 drainages in Colorado were included (USFWS 2009d). Only nine naturally occurring populations
24 are known to have persisted; however, many additional populations have been established in
25 lakes and streams with introductions (USFWS 1998). The most stable population occurs in
26 Rocky Mountain National Park (NatureServe 2012). Currently, 145 populations, in 142 mi
27 (228 km) of streams and 412 acres (167 ha) of lakes, have been documented within the
28 greenback's historic range (USFWS 2011f).
29

30 Habitat requirements of the greenback cutthroat trout differ as it moves through its life
31 stages. Juveniles need the protective cover and low-velocity flow found in side channels and
32 small tributaries. Spawning occurs in riffles with clean gravel; over-wintering fish prefer deep
33 water, low-velocity flow, and protective cover. Adults prefer slow-water areas for resting and
34 fast-water areas for feeding with protective cover from boulders, logs, overhanging vegetation,
35 or undercut banks (USFWS 2009d). Greenbacks also usually require clear, cold, well-
36 oxygenated water (USFWS 2009d).
37

38 The greenback cutthroat trout was listed as an endangered species in 1973 and it was
39 reclassified to a threatened species on April 18, 1978 (USFWS 1978). A recovery plan was
40 approved on March 1, 1998 (USFWS 1998). Critical habitat for this species has not been
41 designated.
42

43 Potential threats to the greenback cutthroat trout that may be associated with ULP
44 activities include impacts to water quality and water flow. Uranium mining can contaminate
45 surrounding water with high levels of ammonia and uranium, which can bioaccumulate in fish

1 (Karp and Metzler 2006; Fresques 2008; Metzler et al. 2008). Eggs of greenback cutthroat trout
2 did not survive in a stream with increased levels of heavy metals (USFWS 1998). The effects of
3 ammonium include reduced growth rate, reduced gamete production, body deformities and
4 malformations, and degenerative gill and kidney appearance and function. Mining activities may
5 also increase the amount of sediment in the river (Leyda 2011). Water depletions associated with
6 uranium mining may contribute to the destruction or adverse modification of habitat for the
7 greenback cutthroat trout (USFWS 2011f). Other threats include removal of riparian habitat;
8 logging; grazing; road and trail construction and use; and recreational vehicle use, fire, and
9 diversion of streams for agricultural or municipal purposes (USFWS 2009d).

12 **E.3.4 Humpback Chub**

14 The humpback chub (*Gila cypha*) is a freshwater fish species in the family *Cyprinidae*.
15 This species is less than 19.7 in. (50 cm) in total length. It has silvery sides and a brown back.
16 Adults have a distinctive dorsal hump, a long snout, and small eyes. Humpback and roundtail
17 chubs can look very similar, and the young in particular do not possess easily identifiable
18 morphological differences (USFWS 1990). The humpback chub reproduces from May to July
19 depending on the location. Spawning occurs when water temperatures are near 68°F (20°C) and
20 spring water flows are at their highest (USFWS 1994b). Both the young and adults are bottom
21 feeders and consume mainly insects and other invertebrates, although they occasionally also
22 consume algae and fish.

24 The humpback chub is found in river canyons in a variety of habitats, including pools,
25 riffles, and eddies. They have also been found near boulder-strewn canyons, travertine dams,
26 rocky runs, riffles, and rapids (USFWS 1994b). Adult humpback chub inhabit deep (1 to 15 ft
27 [0.3 to 4.6 m]), swift-river regions (0–6 in./s or 0–15 cm/s), but they also use microhabitats with
28 low-velocity water. The young are generally found in shallower areas (i.e., in depths of less than
29 9.8 ft [2.9 m]).

31 The humpback chub is endemic to the Colorado River Basin and it is presently restricted
32 to remote, white water canyons. Manmade alterations to the Colorado River may have caused the
33 humpback chub to disappear from certain areas before its presence was documented
34 (USFWS 1990). Because of this uncertainty, the historical distribution of the humpback chub is
35 not well known, although the earliest known record of the species is from the Grand Canyon and
36 it dates from around 4,000 B.C. (USFWS 1990, 1994b).

38 The humpback chub was listed as an endangered species on March 11, 1967. An original
39 recovery plan was approved on August 22, 1979, and the current *Second Revised Recovery Plan*
40 was approved on September 19, 1990 (USFWS 1990). Approximately 379 mi (610 km) of river
41 in the Colorado River Basin were designated as critical habitat for the humpback chub on
42 March 24, 1994. The critical habitat spans three states and it includes portions of the Colorado,
43 Green, and Yampa rivers in the Upper Basin and the Colorado and Little Colorado rivers in the
44 Lower Basin (USFWS 1994b). The largest remaining population of humpback chub in the

1 Colorado River Basin occurs in the Little Colorado and Colorado rivers in the Grand Canyon
2 (USFWS 1994b).

3
4 Potential threats to the humpback chub that may be associated with ULP activities
5 include impacts to water quality and water withdrawals. Uranium mining can contaminate
6 surrounding water with high levels of ammonia and uranium, which can bioaccumulate in fish
7 (Karp and Metzler 2006; Fresques 2008; Metzler et al. 2008). The toxicity of uranium mine
8 tailings has been shown to be devastating to aquatic life in the Colorado River system
9 (USFWS 1990). The effects of ammonium include reduced growth rate, reduced gamete
10 production, body deformities and malformations, and degenerative gill and kidney appearance
11 and function. Mining activities may also increase the amount of sediment in the river
12 (Leyda 2011). Water depletions associated with uranium mining may contribute to the
13 destruction or adverse modification of designated critical habitat for the humpback chub
14 (USFWS 2011e). Other threats include stream alteration, competition with and predation by
15 introduced species, and pollution.

18 **E.3.5 Razorback Sucker**

19
20 The razorback sucker (*Xyrauchen texanus*) is a species of fish in the family
21 *Catostomidae*. This species has a long, high hump behind the head. The head and body are dark,
22 and the sides are brownish and fade to a yellowish-white abdomen. It reaches lengths of 36 to
23 39 in. (91 to 99 cm) and weighs up to 12 lb (5.4 kg) (USFWS 2007). The diet of adults includes
24 planktonic crustaceans, diatoms, filamentous algae, midge larvae, and detritus.

25
26 Habitat requirements of the razorback sucker in rivers include deep runs, eddies,
27 backwaters, and flooded off-channel environments in spring; runs and pools often found in
28 shallow water and associated with submerged sandbars in summer; and low-velocity runs, pools,
29 and eddies in winter (USFWS 2002c). Adults may travel long distances to spawning sites, and
30 spawning usually occurs in rivers over gravel, cobble, or sand substrates during spring runoff at
31 temperatures greater than 57°F (14°C) (USFWS 1991b, 2002c). Spawning can also occur over
32 rocky shoals and shorelines. Young razorback suckers require nursery environments with quiet,
33 warm, and shallow water, such as tributary mouths, backwaters, or inundated floodplain habitats
34 in rivers and coves or shorelines in reservoirs (USFWS 2002c).

35
36 The razorback sucker is endemic to the Colorado River Basin. The historic range of the
37 razorback sucker extended through 3,500 mi (5,633 km) of the Colorado River basin throughout
38 Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, Baja California Norte,
39 and Sonora of Mexico (USFWS 1991b). Currently, the razorback sucker only inhabits about
40 25% of its historical range (750 mi [1,207 km]) in the upper Colorado River basin
41 (USFWS 1991b, 2002c). Most wild fish are now found in Lake Mohave, which represents the
42 largest population within the lower basin (USFWS 2007). This population has dropped from
43 60,000 in 1991 to 9,000 in 2000 (USFWS 2002c). Razorback suckers are currently found in
44 small numbers in the Green River, upper Colorado River, and San Juan River subbasins, the

1 lower Colorado River, the reservoirs of Lakes Mead and Mohave, and in the small tributaries of
2 the Gila River subbasin (USFWS 2002c).

3
4 The razorback sucker was listed as an endangered species on October 23, 1991.
5 Approximately 1,724 mi (2,774 km) of river in the Colorado River Basin were designated as
6 critical habitat for the razorback sucker on March 21, 1994. The critical habitat spans six states
7 and it includes portions of the Green, Yampa, Duchesne, Colorado, White, Gunnison, and San
8 Juan Rivers in the Upper Basin and portions of the Colorado, Gila, Salt, and Verde Rivers in the
9 Lower Basin (USFWS 1994b). A recovery plan was approved on August 28, 2002
10 (USFWS 2002c).

11
12 Potential threats to the razorback sucker that may be associated with ULP activities
13 include impacts to water quality and water withdrawals. Uranium mining can contaminate
14 surrounding water with high levels of ammonia and uranium, which can bioaccumulate in fish
15 species (Karp and Metzler 2006; Fresques 2008; Metzler et al. 2008). The toxicity of uranium
16 mine tailings has been shown to be devastating to aquatic life in the Colorado River system
17 (USFWS 1990). The effects of ammonium include reduced growth rate, reduced gamete
18 production, body deformities and malformations, and degenerative gill and kidney appearance
19 and function. Mining activities might also increase the amount of sediment in the river
20 (Leyda 2011). A catastrophic tailings pile failure could bury important nursery areas and destroy
21 other fish habitat (USFWS 2002c). Water depletions associated with uranium mining may
22 contribute to the destruction or adverse modification of designated critical habitat for the
23 razorback sucker (USFWS 2011c). Other threats include stream alteration, competition with and
24 predation by introduced species, and pollution.

25 26 27 **E.4 BIRDS**

28 29 30 **E.4.1 Gunnison Sage-Grouse**

31
32 The Gunnison sage-grouse (*Centrocercus minimus*) is one of two sage grouse species in
33 the family *Phasianidae* (the other sage grouse species is the greater sage-grouse
34 [*C. urophasianus*]). The Gunnison sage-grouse weighs about a third less than the greater sage-
35 grouse; however, the males of both species possess conspicuous filoplumes and yellow-green air
36 sacs on the chest during the breeding season. Sage grouse gather on leks during the spring where
37 males establish territories and strut for approximately 6 weeks. Sage grouse are polygamous and
38 males do not provide any parental care. The majority of females establish nests within 2 mi
39 (3.2 km) of an active lek. Gunnison sage-grouse have an average clutch size of 6.8 eggs and have
40 one of the lowest nest success rates of all upland game bird species (ranging from 10% to 63%)
41 (Gunnison Sage-Grouse Rangewide Steering Committee 2005).

42
43 Sage grouse are typically found in large expanses of sagebrush-dominated habitats.
44 Various habitats, such as riparian meadows, agricultural lands, and native grasses and forbs are
45 also used if intermixed with sagebrush (USFWS 2010b). The Gunnison sage-grouse relies

1 heavily on sagebrush for nesting, shelter, and food throughout the year. Although forbs and
2 insects are eaten during the summer and early fall, its diet consists entirely of sage brush during
3 the winter (USFWS 2006a).

4
5 Gunnison sage-grouse historically occupied 21,370 mi² (34,392 km²) throughout
6 southwestern Colorado, northwestern New Mexico, northeastern Arizona, and southeastern Utah
7 (USFWS 2006a). Currently, only seven widely scattered and isolated populations occur in
8 Colorado and Utah, occupying 1,511 mi² (2,432 km²) in Gunnison Basin, San Miguel Basin,
9 Monticello-Dove Creek, Piñon Mesa, Crawford, Cerro Summit–Cimarron–Sims Mesa, and
10 Poncha Pass (USFWS 2010b). Gunnison sage-grouse now occupy about 10% of the habitat that
11 existed before the arrival of European settlers (BLM 2010). The breeding population size was
12 estimated to be fewer than 4,000 individuals in 2000, with the largest population (2,000 to
13 3,000 individuals) occurring primarily in Gunnison and Saguache counties, Colorado. The
14 remaining seven populations have fewer than 300 breeding individuals (NatureServe 2012).

15
16 The Gunnison sage-grouse became a candidate for Federal listing on September 28, 2010
17 (USFWS 2010b). The listing of this species was determined to be warranted but was precluded
18 by higher-priority listing actions. The USFWS assigned a listing priority number of two to this
19 species because threats have a high magnitude and are imminent.

20
21 The main threat to the Gunnison sage-grouse is the fragmentation and degradation of
22 sagebrush habitats resulting from conversion to cropland, energy development, and urban
23 development (NatureServe 2012). Potential threats that may be associated with ULP activities
24 include direct habitat loss, fragmentation, and degradation as well as direct disturbance of nests
25 or leks. Mining may result in abandoned mining pits, mining infrastructure, access roads, and
26 overburden placement in sagebrush habitats. Fragmentation of these habitats could force sage-
27 grouse to choose less optimal habitats. Construction of any substantial structure or road, as well
28 as use of access roads, can cause increased deposition of dust on plants and invasion of non-
29 native plants, potentially effecting sagebrush distribution. Increased noise and traffic from
30 human presence may also lead to a disruption of normal grouse behavior and productivity
31 (Gunnison Sage-Grouse Rangelwide Steering Committee 2005). Other threats include fencing
32 (increases mortality due to collision and increased perch sites for nest predators), fires (increases
33 weeds and degrades suitable habitat), and domestic grazing (changes plant communities and
34 soils) (USFWS 2010b).

35 36 37 **E.4.2 Mexican Spotted Owl**

38
39 The Mexican spotted owl (*Strix occidentalis lucida*) is one of three subspecies of the
40 spotted owl (*S. occidentalis*) (USFWS 2011g). They are medium-sized owls without ear tufts
41 (USFWS 2011g). They have dark eyes and ashy-chestnut brown bodies with white and brown
42 spots on their abdomens, backs, and heads (USFWS 2011h). Their wing and tail feathers are dark
43 brown with lighter brown and white bars (USFWS 2011g). Young owls less than 5 months old
44 have a downy appearance. Subadults (5 to 26 months) look like adults but have pointed tail
45 feathers with a white terminal band. Adult tail feathers have rounded tips, and the terminal band

1 is mottled brown and white (USFWS 2011g). Females are generally larger than males
2 (USFWS 2011h). Although most Mexican spotted owls are nonmigratory, some individuals
3 migrate to lower elevations during the winter (USFWS 2011g). The diet of the Mexican spotted
4 owl mainly consists of small and medium-sized rodents; however, they also consume bats, birds,
5 reptiles, and arthropods (USFWS 2011g).

6
7 The habitat requirements of the Mexican spotted owl include forested mountains and
8 canyonlands. Forests used by the Mexican spotted owl are generally uneven-aged and
9 multistoried and have high canopy cover. Larger trees (with an average diameter of 24 in.
10 [61 cm]) are usually chosen for nesting sites. In canyonlands, important features for the Mexican
11 spotted owl include steep canyon walls with isolated pinnacles and rims with large vertical cliffs.
12 The canyon habitats also often include a variety of desert scrub and riparian vegetation
13 communities. Cliff faces contain numerous caves and ledges that create protected microsites for
14 nesting and roosting (USFWS 2011g). Foraging occurs in a wide range of habitats, including in
15 managed and unmanaged forests, piñon-juniper woodlands, mixed-conifer and ponderosa pine
16 forests, cliff faces and terraces between cliffs, and riparian zones.

17
18 Mexican spotted owls rely on existing structures for nesting (e.g., nests built by other
19 birds on cliffs, debris platforms in trees, and tree cavities). Courtship begins in March, with
20 females laying one to three eggs in late March or early April; incubation lasts about 30 days
21 (USFWS 2011g).

22
23 The current range of the Mexican spotted owl is nearly the same as the historical range
24 and it is estimated to include 12,427–1,553,428 mi² (20,000–2,500,000 km²) across Utah,
25 Colorado, Arizona, New Mexico, the western portions of Texas, and several states in Mexico
26 (NatureServe 2012; USFWS 2011g).

27
28 The Mexican spotted owl has experienced a long-term population decline of 30–50%
29 (NatureServe 2012). Currently, 1,301 owl sites (used repeatedly by a single owl or by a pair of
30 owls for nesting, roosting, or foraging) are known in the U.S. portion of the owl's range
31 (USFWS 2011g). The current population size is estimated to be 1,000 to 2,500 individuals. A
32 little more than half of the U.S. population occurs in the Upper Gila Mountains Recovery Unit in
33 Arizona and New Mexico. Many populations occur in isolated mountain ranges separated by
34 large areas of unforested land (NatureServe 2012).

35
36 The Mexican spotted owl was listed as threatened on March 16, 1993 (USFWS 1993). A
37 draft recovery plan was made available for comment on June 28, 2011 (USFWS 2011g).
38 Approximately 4.6 million acres (1.9 million ha) of critical habitat were designated in Arizona,
39 Colorado, New Mexico, and Utah on June 6, 1995. The designated critical habitat was changed
40 first on February 1, 2001 (USFWS 2001a) and again on August 31, 2004 (USFWS 2004).
41 Currently, critical habitat includes approximately 8.6 million acres (3.5 million ha) of habitat in
42 Arizona, Colorado, New Mexico, and Utah (USFWS 2004).

43
44 The greatest threat to the Mexican spotted owl has been loss of habitat resulting from
45 even-aged timber management (NatureServe 2012). Potential threats that may be associated with

1 mining activities include increased mortality, loss or fragmentation of habitat, and a reduced
2 ability to hunt. Increased vehicle traffic associated with mining operations could increase the
3 number of owls killed from colliding with vehicles. The development of mining facilities and
4 access roads could remove or fragment the Mexican spotted owl's habitat. Recent research on
5 acoustic predators (bats and owls) shows that even low levels of traffic noise will mask the
6 rustling sounds of rodents and reduce the ability of the owls to hear them. The noise of the mine
7 operations may have a similar effect and prevent the owls from catching prey (Leyda 2011).
8 Other threats include forest fires, predation, starvation, disease, and parasites (USFWS 2011g). It
9 is unlikely for ULP activities to affect the Mexican spotted owl because suitable habitat for this
10 species is not located in the vicinity of the ULP lease tracts. The species may only occur in the
11 area as a rare migratory transient.
12
13

14 **E.4.3 Southwestern Willow Flycatcher**

15

16 The southwestern willow flycatcher (*Empidonax traillii extimus*) is one of four willow
17 flycatcher subspecies (*E. traillii*). The subspecies are distinguished by subtle differences in color,
18 morphology, and habitat use (USFWS 2002d). The southwestern willow flycatcher is less than
19 6 in. (15 cm) in length; weighs about 4 oz (12 g); and has a brownish-olive body, whitish throat,
20 pale olive breast, pale yellow belly, and two light wing bars (USFWS 2002d, 2011i;
21 NatureServe 2012). The bill is depressed and wide at the base (NatureServe 2012). The birds eat
22 mainly insects, including wasps, bees, moths, caterpillars, and butterflies, although they will
23 sometimes eat berries as well (NatureServe 2012).
24

25 The southwestern willow flycatcher is a neotropical migrant that travels from breeding
26 grounds in the United States to wintering grounds in Central America and South America
27 (USFWS 2005a). Essential habitat includes forested wetlands or scrub-shrub wetlands for
28 breeding, foraging, migrating stopovers, dispersing, and shelter (USFWS 2005a). The species
29 breeds in southern California, southern Nevada, southern Utah, southern Colorado, Arizona, and
30 New Mexico from sea level to around 8,000 ft (2,438 m) above sea level. Nesting occurs
31 primarily in dense swampy thickets of willow, buttonbush, tamarisk, vines, or other plants from
32 6.5 to 98 ft (2 to 30 m) in height (NatureServe 2012; USFWS 2005a). Nesting has been observed
33 in patches ranging from 0.25 to 173 acres (0.1 to 70 ha) (USFWS 2005a). Nesting occurs from
34 early June through the end of July. The clutch size is usually three or four and both parents take
35 care of the young (NatureServe 2012).
36

37 Although the current range of the southwestern willow flycatcher is similar to the
38 historical range, suitable habitat within that range has been greatly reduced (USFWS 2002d).
39 The current range is estimated to be 7,700–965,000 mi² (20,000–2,500,000 km²), and the
40 population is found in relatively small, isolated, and widely dispersed locales
41 (NatureServe 2012). In 2000, 53% of the southwestern willow flycatchers were distributed
42 across only 10 sites (USFWS 2002d). The population has experienced a long-term decline of
43 30–50%, and the population was estimated to be between 1,200 and 1,300 pairs
44 (NatureServe 2012).
45

1 The southwestern willow flycatcher was listed as an endangered species on March 29,
2 1995 (USFWS 2002d). A Recovery Plan was approved on August 30, 2002 (USFWS 2002d).
3 Approximately 599 river mi (964 river km) were designated as critical habitat for the
4 southwestern willow flycatcher on July 22, 1997 (USFWS 1997). On October 19, 2005, the
5 designated critical habitat was amended and it now includes 737 mi (1,186 km) of critical habitat
6 (USFWS 2005a). The currently designated critical habitat includes portions of Arizona,
7 California, Nevada, New Mexico, and Utah.

8
9 The greatest threat to the southwestern willow flycatcher is the loss or degradation of
10 riparian habitat (USFWS 2002d). Potential threats to the southwestern willow flycatcher that
11 may be associated with ULP activities include facility development, water withdrawal, and
12 increased human presence. Direct habitat loss may occur from the development of mining
13 facilities and access roads. Reduction of water in riparian habitats degrades habitat that is
14 essential to the southwestern willow flycatcher habitat. Human disturbances at nesting sites
15 resulting from human presence or traffic noise may result in nest abandonment (USFWS 2011i).
16 Additional threats include fire, livestock grazing, and brood parasitism by the brown-headed
17 cowbird (USFWS 2002d).

18 19 20 **E.4.4 Western Yellow-Billed Cuckoo**

21
22 The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is one of two
23 subspecies of yellow-billed cuckoo (*C. americanus*). The western yellow-billed cuckoo is about
24 12 in. (31 cm) in length with a slender, long-tailed profile (USFWS 2009e). It is brownish above
25 and white below, with rusty-colored flight feathers. The upper mandible of the bill is black, and
26 the lower mandible is yellow. The underside of the tail has pairs of large, white spots
27 (USFWS 2011j).

28
29 The breeding habitat for the western yellow-billed cuckoo consists of large lease tracts of
30 deciduous riparian woodland, especially dense stands of cottonwood and willow, although
31 desirable breeding habitat can also include mesquite and salt-cedar, in some areas. Nests are
32 placed in dense cover of trees, shrubs, or vines; near water; and generally 4.9 to 42.6 ft (1.5 to
33 13 m) above ground. Dense understory foliage appears to be an important factor in nest-site
34 selection, while cottonwood trees are an important foraging habitat (USFWS 2009e).
35 Nonbreeding habitats include various types of forest, woodland, and scrub (NatureServe 2012).

36
37 The western yellow-billed cuckoo arrives on breeding grounds in the United States from
38 late May to June and begins fall migration to South America from August to late September
39 (Wiggins 2005). While they are courting females, the males will often carry a food item to offer
40 the females during copulation (Wiggins 2005). Clutch size varies from one to five eggs; both
41 parents build the nest, incubate the eggs, and feed the young. They feed primarily on slow-
42 moving insects including grasshoppers, caterpillars, and beetles (Wiggins 2005).

43 The western yellow-billed cuckoo, which historically had bred throughout most of
44 western North America, is now extirpated in western Canada, Washington, and Oregon—and
45 now is rare and patchily distributed throughout most of the United States west of the Rocky

1 Mountains. In western Colorado, the western yellow-billed cuckoo, which was never common in
2 that area, appears to be disappearing (Wiggins 2005).

3
4 It is estimated that there could be less than 2,000 breeding pairs of the western yellow-
5 billed cuckoo across the entire range. It is estimated that this breeding population has declined by
6 at least 90% since the end of the 19th century (NatureServe 2012).

7
8 The western yellow-billed cuckoo became a candidate for Federal listing on October 30,
9 2001 (USFWS 2001b). The listing of this species was determined to be warranted but was
10 precluded by higher-priority listing actions. The U.S. Fish and Wildlife Service (USFWS)
11 assigned a listing priority number of three to the western Distinct Population Segment that occurs
12 in Washington, Oregon, California, Idaho, Nevada, Montana, Wyoming, Utah, Arizona,
13 Colorado, New Mexico, Texas, British Columbia, and Mexico.

14
15 Potential threats to the western yellow-billed cuckoo that may be associated with the ULP
16 activities include loss or fragmentation of breeding habitat due to the development of facilities or
17 roads. Increased noise from human presence and vehicle traffic may also affect the western
18 yellow-billed cuckoo. The western yellow-billed cuckoo was 10 times more likely to be present
19 at sites far (i.e., greater than 2,297 ft [700 m]) from roads with heavy traffic than at sites near
20 (i.e., less than 820 ft [250 m]) to roads with heavy traffic (Goodwin and Shriver 2011). Other
21 threats include use of pesticides and loss or degradation of habitat as a result of grazing and river
22 management (NatureServe 2012).

23 24 25 **E.5 MAMMALS**

26 27 28 **E.5.1 Black-Footed Ferret**

29
30 The black-footed ferret (*Mustela nigripes*) is the only ferret species native to North
31 America. It is brownish in color with a slightly paler belly and black facemask, legs, and tip of
32 tail (NatureServe 2012; USFWS 2003). It is about 23.6 in. (60 cm) in length and weighs up to
33 2.4 lb (1.1 kg) (USFWS 2003). In captivity, the black-footed ferret reproduces in March and
34 early April, and the gestation period is about 45 days. The average litter size is 3.5; the young
35 disperse in the fall. Some females can reproduce as yearlings. Black-footed ferrets are nocturnal
36 and can remain inactive for up to 6 days during the winter. Their main food item is prairie dogs,
37 but ground squirrels, rabbits, deer mice, voles, pocket gophers, birds, and insects are also
38 sometimes consumed (NatureServe 2012; USFWS 1988).

39
40 Historically, the black-footed ferret's range extended throughout Arizona, Colorado,
41 Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas,
42 Utah, Wyoming, Alberta, and Saskatchewan. The current range is estimated to be between
43 62 and 155 mi² (100 and 250 km²) (NatureServe 2012). The black-footed ferret relies on prairie
44 dog colonies for food, shelter, and denning; and thus, has only been found in the vicinity of
45 black-tailed prairie dog, white-tailed prairie dog, and Gunnison's prairie dog colonies

1 (USFWS 2003). By the early 1970s, the black-footed ferret was near extinction as a result of the
2 intentional poisoning of prairie dogs and the introduction of disease to prairie dogs
3 (USFWS 2003). Remaining ferrets were used for captive breeding and a few reintroductions
4 have successfully established reproducing populations (NatureServe 2012). The population size
5 is now estimated to be between 250 and 1,000 individuals (NatureServe 2012). In late 2005,
6 400 reintroduced individuals were alive in the wild (NatureServe 2012).

7
8 The black-footed ferret was listed as an endangered species on March 11, 1967
9 (USFWS 2001b). A Recovery Plan was approved on August 8, 1988 (USFWS 1988). The
10 species may be extirpated from the State of Colorado, with the exception of reintroduced
11 populations in the northwestern portion of the state (CPW 2012; USFWS 2012). Black-footed
12 ferrets were released in the Wolf Creek Management Area in Moffat and Rio Blanco counties in
13 Colorado between 2001 and 2006 (BLM 2008). These populations are considered to be
14 experimental, nonessential populations under Section 10(j) of the Endangered Species Act.
15 While it is unlikely that these species will occur in the affected areas of the ULP lease tracts, the
16 area of western Colorado containing the ULP lease tracts has not been block-cleared for black-
17 footed ferrets (USFWS 2012).

18
19 Black-footed ferret habitat is the same habitat used by prairie dogs and includes
20 grasslands, steppe, and shrub steppe. Prairie dog holes serve as resting and birth sites. Between
21 99 and 148 acres (40 and 60 ha) of prairie dog colony are needed to support one ferret
22 (NatureServe 2012).

23
24 Potential threats to black-footed ferrets or their habitat associated with the ULP activities
25 may include increased mortality resulting from collision with vehicles and loss of habitat
26 stemming from the development of mining facilities and access roads. Other threats include
27 prairie dog poisoning and shooting, canine distemper, sylvatic plague, and predation
28 (USFWS 1988).

31 **E.5.2 Canada Lynx**

32
33 The Canada lynx (*Lynx canadensis*) is a medium-sized cat reaching 30–35 in. (76–89 cm)
34 in length and weighing 18–23 lb (8–10.4 kg). The lynxes have large feet; long legs; tufts on their
35 ears; and short, black-tipped tails. During the winter, their fur is dense and grayish-brown mixed
36 with buff or pale brown on the back; and grayish-white on the belly, legs, and feet. During the
37 summer, their fur is more reddish to gray-brown (USFWS 2011k). They prey on snowshoe hares,
38 but if hare densities are low, they will prey opportunistically on other small mammals (like red
39 squirrels, flying squirrels, ground squirrels, porcupines, beavers, mice, voles, shrews), birds
40 (grouse), and fish (USFWS 2009f, 2011k). Home ranges are generally between 19 and 134 mi²
41 (31 and 216 km²) (USFWS 2009f). Breeding occurs in March and April for yearling females,
42 with litter sizes averaging three to four kittens. The male does not help with rearing the young
43 (NatureServe 2012).

1 Habitat requirements of the Canada lynx include boreal forests, deciduous temperate
2 forests, and subalpine forests that experience cold winters with deep, fluffy snow for extended
3 periods. Hunting occurs in forests with dense understories. Denning occurs in forests where
4 woody debris, such as logs and windfalls, provide protection for kittens (USFWS 2009f). The
5 lynx density in the contiguous United States is lower than it is in Canada because of a smaller
6 and patchier habitat range and an increased rate of competition for food (USFWS 2009f). Canada
7 lynx in the contiguous United States occur in forested portions of Colorado, Idaho, Maine,
8 Michigan, Minnesota, Montana, New Hampshire, New York, Oregon, Utah, Vermont,
9 Washington, and Wisconsin. Although a lack of historic or current lynx data for the contiguous
10 United States makes it difficult to determine population estimates or trends for this region, it is
11 estimated to be fewer than 2,000 (USFWS 2000; NatureServe 2012). Their current range
12 (including Alaska and Canada) is estimated to be greater than 1,553,428 mi² (2,500,000 km²)
13 [1.5 million mi² (2.5 million km²)] (NatureServe 2012).
14

15 The Canada lynx was listed as a threatened species on March 24, 2000 (USFWS 2000).
16 On December 17, 2009, the Canada lynx became a candidate for Federal listing in New Mexico,
17 with a listing priority number of 12 because they are regularly and frequently crossing the state
18 boundary between Colorado and New Mexico, leaving them without Federal protection
19 (USFWS 2009g). A recovery plan was outlined on September 14, 2005 (USFWS 2005b).
20 Approximately 2,963 mi² (4,768 km²) were designated as critical habitat for the Canada lynx on
21 November 9, 2006 (USFWS 2006b). On February 25, 2009, additional critical habitat was
22 designated, bringing the total designated critical habitat to 62,765 mi² (101,010 km²) in Maine,
23 Minnesota, Montana, Wyoming, Idaho, and Washington (USFWS 2009f).
24

25 Given the species' preference for high-elevation coniferous forests, it is unlikely that the
26 Canada lynx will occur in areas of direct ULP activity. Previous threats to this species include
27 loss or alteration of habitat because of climate change, timber harvest, and human recreation
28 (USFWS 2009f; NatureServe 2012).
29
30

31 **E.5.3 Gunnison's Prairie Dog**

32

33 The Gunnison's prairie dog (*Cynomys gunnisoni*) is a large rodent that occurs from
34 central Colorado to central Arizona, including small portions of northwestern New Mexico and
35 southeastern Utah. The species is divided into mountain and prairie populations which are
36 separated by mountain ranges that almost completely limit prairie dog movement between
37 populations. Genetic testing is currently being conducted to determine whether montane and
38 prairie Gunnison's prairie dogs are populations or subspecies (USFWS 2011). The Gunnison's
39 prairie dog is darker overall and has less striking facial markings than does the white-tailed
40 prairie dog. It reaches a length of 11.8–15.4 in. (30–39 cm) and a weight of 0.6–3 lb (0.3–1.4 kg)
41 (Seglund and Schnurr 2010). Females reproduce as yearlings, whereas only a quarter of males
42 reproduce as yearlings (NatureServe 2012). Polygamous mating usually occurs in April and May
43 and one litter with an average litter size of six is produced per year (Seglund and Schnurr 2010;
44 NatureServe 2012). Colonies consist of 50 to 100 individuals. Only 50% of females survive their
45 first year and less than 15% survive to their second year. Their diet consists mainly of grasses,

1 forbs, sedges, and shrubs, although they also consume insects. Prairie dogs can exhibit periods of
2 inactivity during winter that last for months, and individuals in some parts of the range hibernate
3 (NatureServe 2012).

4
5 Habitat requirements for the Gunnison's prairie dog include level to gently sloping (less
6 than 30%) grasslands and semidesert or montane shrublands at elevations of 6,004–12,008 ft
7 (1,830–3,660 m) in high mountain valleys and plateaus. Burrows require well-drained soils and
8 are usually found on slopes or in hummocks (Seglund and Schnurr 2010; NatureServe 2012;
9 USFWS 2011). The montane portion of their habitat comprises about 40% of the total potential
10 habitat (USFWS 2008a).

11
12 The Gunnison's prairie dog has experienced a long-term population decline of 30–70%
13 throughout its range. The current distribution is estimated to be between 100 and 8,000 mi²
14 (161 and 12,875 km²) in Arizona, Colorado, New Mexico, and Utah (USFWS 2011). From
15 1916 to 2008, the habitat occupied by the Gunnison's prairie dog declined from 60,273 mi²
16 (97,000 km²) to 845–1,243 mi² (1,360–2,000 km²). Only 3.6% of potential habitat is occupied in
17 the montane portion of the range. The montane population of prairie dogs no longer has the
18 metapopulation structure necessary to recover from catastrophic events because of their small
19 population size and isolation in montane habitats (USFWS 2011). The current total population
20 size for prairie and montane populations is estimated to be between 100,000 and 1,000,000
21 (NatureServe 2012).

22
23 The Gunnison's prairie dog became a candidate for Federal listing on February 5, 2008
24 (USFWS 2008a). The listing of this species was determined to be warranted but was precluded
25 by higher-priority listing actions. The USFWS originally assigned a listing priority number of
26 two to the species because threats have a high magnitude and are imminent (USFWS 2008a). On
27 December 10, 2008, the listing priority was changed to three because listing of the Gunnison's
28 prairie dog is warranted but precluded only in the montane region of its range within Colorado
29 and New Mexico (USFWS 2008b).

30
31 The greatest threat to the Gunnison's prairie dog is the sylvatic plague
32 (NatureServe 2012). Potential threats to the Gunnison's prairie dog that may be associated with
33 the ULP activities include development and the presence of infrastructure and traffic, which
34 could result in highly fragmented habitats (Seglund and Schnurr 2010). Other threats include
35 predation and human chemical control and shooting (USFWS 2011).

36 37 38 **E.5.4 North American Wolverine**

39
40 The North American wolverine (*Gulo gulo luscus*) is a subspecies of the wolverine
41 (*G. gulo*), which has a Holarctic range. It is the largest terrestrial member of the weasel family,
42 with adult males weighing 26–40 lb (12–18 kg) and females weighing 18–26 lb (8–12 kg). It has
43 a similar appearance to a small bear with a bushy tail; round head; short, rounded ears; small
44 eyes; and claws used for digging and climbing (USFWS 2010c). It is a dark brown color with a

1 paler head and two broad yellowish stripes running from the shoulders and joining on the rump
2 (NatureServe 2012).

3
4 The North American wolverine breeds at two-years-of-age from late spring to early fall
5 and has an average of 3.4 kits per litter. Because of high rates of spontaneous abortion, rates of
6 successful reproduction are among the lowest for mammals. Gestation lasts 30–40 days.
7 Wolverines are opportunistic feeders that primarily consume carrion but will also eat small
8 animals, birds, fruits, berries, and insects. They naturally occur at low densities ranging from
9 one wolverine per 40 to 209 mi² (65 to 337 km²) (USFWS 2010c). The home range of a
10 wolverine can range from 62 to 559 mi² (100 to 900 km²) (USFWS 2011m).

11
12 Habitat requirements for the North American wolverine include 4.9 ft (1.5 m) of snow to
13 excavate natal dens. Rocky sites such as north-facing boulder talus and subalpine cirques in
14 forest openings above 8,202 ft (2,500 m) are selected for dens. Wolverines occur within a wide
15 variety of cold habitats that receive enough winter precipitation. Their range includes alpine,
16 boreal, and arctic habitats, such as boreal forests, tundra, and high-elevation alpine regions
17 (USFWS 2010c).

18
19 The North American wolverine occurs throughout Alaska, Canada, and high-elevation
20 habitats of Washington, Idaho, Montana, Wyoming, California, and Colorado. The current
21 population of the North American wolverine in the contiguous United States is estimated to be
22 between 250 and 300 with the largest population occurring in the Northern Rocky Mountains. It
23 is believed that wolverines were entirely or nearly extirpated from the contiguous United States
24 in the first half of the 20th century and currently functioning populations have reestablished in
25 two regions: the North Cascades in Washington; and the northern Rocky Mountains in Idaho,
26 Montana, and Wyoming. Wolverines are also present in the southern Rocky Mountains and the
27 Sierra Nevada Mountains; however, reestablishment of populations has not occurred in those
28 areas yet (USFWS 2010c).

29
30 The North American wolverine became a candidate for Federal listing on December 14,
31 2010 (USFWS 2010c). This decision was reached after several status reviews arose because of
32 complaints and lawsuits filed by environmental groups after the initial USFWS decision in 2003
33 that listing was not warranted (NatureServe 2012). In 2010, the listing of this species was
34 determined to be warranted but was precluded by higher-priority listing actions. USFWS
35 originally assigned a listing priority number of six to the species because threats have a high
36 magnitude but are not imminent (USFWS 2011m).

37
38 The main threat to the North American wolverine is habitat loss due to climate change
39 (USFWS 2011m). Other threats include loss of habitat due to human activities such as winter and
40 summer recreation, housing and industrial development, and extractive industry such as logging
41 (USFWS 2010c). Given the species' preference for high elevation forested areas, it is unlikely
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