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APPENDIX F:
PROPOSED CONSERVATION MEASURES
FOR OIL SHALE AND TAR SANDS LEASING AND DEVELOPMENT

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APPENDIX F:**PROPOSED CONSERVATION MEASURES
FOR OIL SHALE AND TAR SANDS LEASING AND DEVELOPMENT**

The following conservation measures were developed for the oil shale and tar sands program in consultations between the Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS) (both in the U.S. Department of the Interior) to support the conservation of species listed under the Endangered Species Act (ESA). For purposes of this programmatic environmental impact statement (PEIS), these conservation measures are assumed to be generally consistent with existing conservation agreements, recovery plans, and completed consultations. It is the intent of the BLM and USFWS to ensure that the conservation measures presented here are consistent with those currently applied to other land management actions whose associated impacts are similar. However, it is presumed that potential impacts from the development alternatives described in this PEIS are likely to vary in scale and intensity when compared with the impacts associated with other land management actions (e.g., oil and gas exploration and production, surface mining, and underground mining). Hence, final conservation measures will be developed to be commensurate with the expected levels of impact on selected alternatives and to be consistent with agency policies. Current BLM guidance on similar actions (e.g., fluid mineral leasing) requires that the stipulation that is least restrictive yet effectively accomplishes the resource objectives or resource uses for a given alternative shall be used, while compliance with the ESA is maintained.

F.1 CONSERVATION MEASURES GENERALLY APPLICABLE TO ALL LISTED SPECIES

1. All post-lease activities will be required to comply with the ESA, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act.
2. Surveys will be required prior to operations, unless information on species occupancy and distribution in the area under consideration is complete and available. All surveys must be conducted by qualified individual(s) approved by the BLM. For bald and golden eagles, Mexican spotted owls, and other raptors, surveys shall be conducted up to 1 mi from the proposed disturbance to determine nest and roost status and will be conducted in accordance with existing guidelines. Surveys for listed plant and animal species will follow established protocols approved by the USFWS.
3. Lease activities, upon the start of their implementation, will require monitoring throughout the duration of the project. To ensure that the desired results are being achieved, mitigation measures will be evaluated, and, if necessary, Section 7 consultation will be reinitiated.

- 1 4. Water production will be managed to ensure the maintenance or enhancement
2 of riparian habitat and surface water quality.
3
- 4 5. Loss of riparian and wetland habitats resulting from mining and in situ
5 processing activities will be avoided where possible. Loss of riparian and
6 wetland habitats resulting from activities associated with roads, pipelines, and
7 other ancillary facilities will be minimized. Wetland and riparian habitats will
8 be restored when it has not been possible to avoid impacts from facilities on
9 them. Avoidance is particularly important when facilities are within or
10 adjacent to designated critical habitat for listed species.
11
- 12 6. Transportation management plans will be developed in a manner that
13 minimizes habitat fragmentation and destruction.
14
15

16 **F.2 SPECIES-SPECIFIC CONSERVATION MEASURES**

17
18

19 **F.2.1 Colorado River Endangered Fishes: Bonytail, Colorado Pikeminnow,** 20 **Humpback Chub, Razorback Sucker**

21

- 22 1. Within 0.5 mi of critical habitat, (a) all mining and drilling activities will be
23 avoided and (b) surface disturbance and the removal of vegetation for roads,
24 pipelines, water diversion and acquisition facilities, and other ancillary
25 facilities will be minimized. When surface disturbance within 0.5 mi of
26 critical habitat is needed to address any of the elements in item b, the BLM
27 shall confer with the USFWS regarding minimizing potential impacts on
28 critical habitat and/or endangered fish.
29
- 30 2. With regard to tributaries of major rivers that contain listed fish species or
31 their designated critical habitat, no building of permanent structures, no
32 drilling, and no mining will occur in the 100-year floodplains or riparian
33 corridors that are within those rivers' zones of influence.
34
- 35 3. To avoid excessive stream sedimentation during the spawning period,
36 construction activities (e.g., for roads, pipelines, utilities) will be avoided
37 within critical habitat from April 1 through September 30 of any year.
38
- 39 4. The installation of water diversion structures that might pose a risk to
40 Colorado River fishes or their critical habitat will be avoided (e.g., screens
41 or baffles will be used to minimize entrainment or impingement). If water
42 withdrawal or diversion structures are installed, they will have to incorporate
43 3/32-in. fish screens.
44
- 45 5. Pump intakes are prohibited from backwaters or off channel floodplain
46 wetlands to minimize impacts on fish larvae.

- 1 6. The release of selenium into surface waters will be avoided, and, where
2 possible, measures will be implemented to reduce selenium concentrations in
3 the Upper Colorado River Basin. For example, (a) erosion in areas with
4 selenium-rich soils (e.g., shale-derived soils) will be decreased, (b) adequate
5 vegetative cover will be maintained on work areas where possible,
6 (c) ephemeral stream flow will be controlled with water-spreading structures,
7 (d) areas with selenium-rich soils will not be irrigated, and (e) causing impacts
8 on selenium-rich soils on steep (>50%) slopes will be avoided. If selenium-
9 rich slag/waste piles are created, they shall be isolated and located so this
10 material does not reach critical habitat.
11
- 12 7. All new pipelines and other controlled surface uses that cross within 0.5 mi of
13 critical habitat or areas that drain into critical habitat of the Colorado River
14 fishes will adhere to the following stipulations:
15
- 16 a. Pipelines shall not be constructed in known spawning sites or backwaters.
17
- 18 b. No work in the active river channel will take place between July 1 and
19 September 30 in order to avoid adverse effects from sedimentation during
20 spawning and times when larval fishes are drifting in the river channel.
21
- 22 c. After construction, the streambed will be returned to preconstruction
23 contours.
24
- 25 d. Pipelines transporting substances other than water will have automatic
26 shut-off valves.
27
- 28 e. Pipelines transporting substances other than water will be double-walled
29 wherever they cross the 100-year floodplain and river.
30
- 31 f. A spill/leak contingency plan will be developed prior to pipeline use.
32
- 33 8. The Utah Oil and Gas Pipeline Crossing Guidance (from the BLM National
34 Science and Technology Center) will be implemented.
35
- 36 9. If water for project-related activities is obtained from any surface water source
37 (stream, pond, etc.) or from any groundwater source that has a connection to
38 surface water, the BLM will require that all water withdrawals undergo
39 appropriate Section 7 consultation in accordance with procedures existing at
40 the time of the proposed action. Currently, according to the Colorado River
41 Recovery Program's Section 7 Agreement, new water depletions are handled
42 as follows:
43
- 44 a. For average annual depletions that are more than 100 acre-ft but less than
45 or equal to 4,500 acre-ft (i.e., the USFWS's current "sufficient progress"
46 threshold), the applicant pays a one-time depletion fee (which is adjusted

1 annually to the consumer price index); the fiscal year (FY) 2012 rate is
2 \$19.21/acre-ft.

- 3
4 b. For average annual depletions that are more than 4,500 acre-ft, the
5 applicant pays the depletion fee, and the BLM (acting on behalf of the
6 applicant) and USFWS select (an) action(s) from the Colorado River
7 Recovery Implementation Plan's Recovery Action Plan that must be
8 completed before the impacts of the proposed action occur.

9
10 10. The following best management practices for in-stream work that is upstream
11 from or near critical habitat will be carried out:

- 12
13 a. Flows shall be allowed to bypass the construction activity at all times.
14 Earthen dams and dewatering activities that will create fish barriers shall
15 be avoided.
- 16
17 b. Hazardous fish habitats, such as isolated areas (i.e., ponds or puddles),
18 shall not be created or shall be cleared by trained professionals with
19 adequate permits.
- 20
21 c. Care shall be taken to minimize sedimentation inputs to the river that
22 result from stream bed disturbance by storing excavated material outside
23 the stream channel.
- 24
25 d. Best management practices shall be used to ensure construction-related
26 by-products do not enter the riverine ecosystem and have negative effects
27 on aquatic organisms.
- 28
29 e. Equipment shall be cleaned to remove noxious weeds, seeds, and
30 petroleum products before it is moved on-site.
- 31
32 f. Machinery shall be fueled outside the ephemeral channel to prevent
33 spillage into waterways.
- 34
35 g. Fill materials shall be free of waste, pollutants, and noxious weeds and
36 seeds.
- 37
38 h. Excavated soils shall be sorted into mineral soils and topsoils. When a
39 disturbed site is being backfilled, topsoils shall be placed on top to provide
40 a seed bed for native plants. After construction, disturbed areas (work
41 sites, ingress, egress, stockpile sites, pit) shall be revegetated with native
42 plants or certified as weed-free native seed. The planting shall be
43 monitored for success. If the planting fails, the soil shall be reseeded/
44 planted.
- 45
46

1 **F.2.2 Colorado River Cutthroat Trout**

- 2
3 1. A buffer that is a minimum of 0.25-mi wide on both sides of occupied
4 cutthroat trout streams and upstream tributaries will be maintained. The buffer
5 will be extended beyond the 0.25-mi minimum in areas where slopes exceed
6 50%; it will extend out to where the land is relatively level. The idea is to
7 keep any sediment from reaching occupied cutthroat trout reaches by ensuring
8 that mining and drilling take place on flat ground in areas where these fish
9 occur. Linear features, such as roads and pipelines, may be allowed within the
10 buffer zones. Only a handful of known cutthroat trout populations occur in the
11 oil shale and tar sands planning area, and these conservation measures will
12 affect only a very small portion of the area proposed for leasing (5% or less).
13
- 14 2. No water will be withdrawn from waters occupied by Colorado River
15 cutthroat trout.
16
- 17 3. Oil shale and tar sands activities will be consistent with the June 2006
18 *Conservation Agreement for Colorado River Cutthroat Trout* (*Oncorhynchus*
19 *clarkia pleuriticus*) *in the States of Colorado, Utah, and Wyoming* (CRCT
20 Conservation Team 2006).
21

22 **F.2.3 Bald Eagle and Golden Eagle¹**

- 23
24
25 1. A buffer of 1 mi from known bald eagle nests and 0.5 mi from golden eagle
26 nests will be maintained year-round. This buffer can be reduced if topographic
27 and/or vegetative buffers exist between the nest and the potentially disturbing
28 activity. This avoidance requirement may be adjusted on the basis of a
29 demonstration of nonoccupancy during the last 7 years. Any modification will
30 be done in coordination with the USFWS.
31
- 32 2. A year-round avoidance requirement of 0.5 mi from known winter roost
33 sites will be maintained. This buffer can be reduced if topographic and/or
34 vegetation buffers exist between the roost and development activity. This
35 avoidance requirement may be adjusted on the basis of a demonstration of
36 nonoccupancy during the last 7 years. Any modification will be done in
37 coordination with the USFWS.
38
- 39 3. Loss of or disturbance to riparian habitats containing cottonwoods, conifers,
40 or other tree species that, when mature, may provide roost or nest trees for
41 bald eagles will be avoided. Loss of any other riparian plant species (including
42 box elders, willows, and river birch) will be minimized. The alteration or
43 removal of cliff habitat in golden eagle nesting habitats will be avoided.
44

¹ Nesting and wintering dates can vary by location. Contact local USFWS office for dates specific to a given area.

- 1 4. The USFWS recommends that the BLM and contractors be informed of the
2 risk or potential for vehicle collisions with wildlife (particularly eagles) in the
3 project area and be requested to limit vehicle speed to reduce this potential. In
4 addition, contractors shall move any big game carcasses found along project
5 area roads away from the roadway by 30 ft (generally 60-ft-wide rights-of-
6 way [ROWs]) to minimize potential vehicle collisions with eagles while they
7 feed on roadside carrion. Moreover, in an additional effort to protect eagles,
8 the BLM and contractors will coordinate with appropriate officials regarding
9 any required removal of big game carcasses along county or state roads.
10
- 11 5. To preclude eagles or other raptors from nesting on human-made structures,
12 such as cell phone towers and condensate tanks, and to avoid impeding
13 operation or maintenance activities, anti-perching devices will be installed on
14 structures to discourage their use by eagles and other raptors.
15
- 16 6. Electric lines will be buried wherever practicable, especially in areas heavily
17 used by eagles. If power lines cannot be buried, they will be built so that they,
18 at a minimum, meet the standards identified by the Avian Power Line
19 Interaction Committee (2006) to decrease the potential for electrocution (see
20 *Suggested Practices for Raptor Protection on Power Lines: The State of the*
21 *Art in 2006*, [http://www.eei.org/products_and_services/descriptions_and_](http://www.eei.org/products_and_services/descriptions_and_access/suggested_pract.htm)
22 [access/suggested_pract.htm](http://www.eei.org/products_and_services/descriptions_and_access/suggested_pract.htm)). Moreover, power lines will be built according to
23 the additional specifications listed below. The project proponent shall ensure
24 that these additional standards to minimize eagle deaths associated with
25 electric utility distribution lines will be incorporated into the stipulations for
26 all project actions. Note that the effectiveness of these measures in minimizing
27 mortality varies; thus, the measures may be modified as they are tested in the
28 field and laboratory. Local habitat conditions shall be considered in
29 determining their use. The USFWS does not endorse any specific product that
30 can be used to prevent and/or minimize mortality. The following
31 recommendations shall be incorporated into the design plans for new
32 distribution lines or when existing facilities are being modified.
33

34 For new distribution lines and facilities:
35

- 36 a. Raptor-safe structures (e.g., with increased conductor-conductor spacing)
37 that address adequate spacing for eagles (i.e., minimum of 60 in. for bald
38 eagles) are to be used.
39
- 40 b. Equipment installations (e.g., overhead service transformers, capacitors,
41 reclosers) shall be made eagle-safe (e.g., by insulating the bushing
42 conductor terminations and using covered jumper conductors).
43
- 44 c. Jumper conductor installations (e.g., corner and tap structures) shall be
45 made eagle-safe by using covered jumpers or providing adequate
46 separation.

- 1 d. Arrestor and cutout covers shall be employed when necessary.
2
3 e. Lines shall avoid high-avian-use areas, such as wetlands, prairie dog
4 towns, and grouse leks.
5

6 For modification of existing facilities:
7

- 8 a. Problem structures that include dead ends, tap or junction poles,
9 transformers, reclosers and capacitor banks, or other structures with less
10 than 60 in. between conductors or a conductor and ground shall be
11 identified and rectified.
12
13 b. Exposed jumpers will be covered.
14
15 c. Any pole-top ground wires will be capped.
16
17 d. Grounded guy wires shall be isolated by installing an insulating link.
18
19 e. On transformers, insulated bushing covers, covered jumpers, and cutout
20 covers and arrestor covers shall be installed, if necessary.
21
22 f. When bald eagle mortalities occur on existing lines and structures, bald
23 eagle protection measures shall be applied (e.g., modify for raptor-safe
24 construction, install safe perches or perching deterrents, install nesting
25 platforms or nest-deterrent devices).
26
27 g. In areas where mid-span collisions are a problem, install line-marking
28 devices that have been proven effective. All transmission lines that span
29 streams and rivers shall maintain proper spacing and have markers
30 installed.
31
32 h. If topographic issues or impacts on vegetative or wildlife resources have
33 been identified at the construction site. poles will be moved
34
35 7. When communication towers are being constructed, refer to the USFWS
36 *Guidance on the Siting, Construction, Operation, and Decommissioning of*
37 *Communication Towers*, found at [http://www.fws.gov/migratorybirds/](http://www.fws.gov/migratorybirds/currentbirdissues/hazards/towers/comtow.html)
38 [currentbirdissues/hazards/towers/comtow.html](http://www.fws.gov/migratorybirds/currentbirdissues/hazards/towers/comtow.html).
39
40

41 **F.2.4 Mexican Spotted Owl²** 42

- 43 1. Within the range of the Mexican spotted owl, surface disturbance will be
44 avoided wherever suitable nesting habitat for the species occurs (steep-walled,

² Contact local USFWS office for breeding season dates specific to a given area.

- 1 rocky canyons, typically with a closed canopy of mature, mixed coniferous
2 forest) (USFWS 1995, *Recovery Plan for the Mexican Spotted Owl*,
3 particularly Table III.B.1). (The range of the Mexican spotted owl that was
4 published in the recovery plan shall be extended to include the individuals
5 observed within Dinosaur National Monument.)
6
- 7 2. In areas in which Mexican spotted owl habitat has not been analyzed, the
8 BLM will assess and map the potential habitat for this species by using
9 established protocols prior to leasing of mineral rights for oil shale and tar
10 sands. This mapping effort will be a broad-based approach, from which more
11 specific and intensified habitat analyses could be initiated. The BLM will
12 notify prospective bidders of the presence of Mexican spotted owl habitat and
13 the need for special considerations for managing this species.
14
- 15 3. Where possible, field surveys for the Mexican spotted owl will be conducted
16 in areas of suitable habitat. The surveys shall follow established USFWS
17 protocols. This information will increase the knowledge base on the
18 distribution and status of Mexican spotted owls throughout areas with oil
19 shale and tar sands potential in Utah and Colorado. Field surveys will
20 emphasize areas that have not been previously or recently surveyed. Areas of
21 particular interest include the southern Book Cliffs and areas surrounding
22 Dinosaur National Monument.
23
- 24 4. Once leases are issued, a more in-depth analysis of Mexican spotted owl
25 habitat will be required in areas where leases overlap with potential habitat for
26 the species. The habitat needs to be assessed for both nesting and foraging by
27 using accepted habitat models in conjunction with field reviews. If the habitat
28 is determined to be suitable, management considerations shall include the
29 avoidance of suitable habitat by at least 0.5 mi. If avoidance is not possible,
30 then, unless species occupancy and distribution information is complete and
31 available, site-specific surveys will be needed to determine occupancy.
32
- 33 5. Apply the conservation measures below if project activities occur within
34 0.5 mi of suitable owl habitat:
35
- 36 a. Determine the potential effects of actions on owls and their habitat.
37
- 38 b. Document the type of activity, the acreage and locations of direct habitat
39 impacts, and the type and extent of indirect impacts relative to the location
40 of suitable owl habitat.
41
- 42 c. Document if the action is temporary or permanent. A temporary action is
43 one that is completed prior to the following breeding season, leaves no
44 permanent structures, and results in no permanent habitat loss. A
45 permanent action is one that continues for more than one breeding season

1 and/or causes a loss of owl habitat or displaces owls through disturbances
2 (such as the creation of a permanent structure).
3

- 4 6. For all temporary actions that may impact owls or suitable habitat:
5
6 a. If the action will occur entirely outside the owl breeding season
7 (e.g., March 1 to August 31 in Utah) and leaves no permanent structure
8 or permanent habitat disturbance, the action can proceed without the need
9 for an occupancy survey.
10
11 b. If the action will occur during a breeding season, a survey for owls shall
12 be performed before the activity commences. If owls are found, the action
13 must be delayed until it occurs outside the breeding season.
14
15 c. Access routes created by the project shall be rehabilitated through
16 measures such as raking out scars, revegetation, and gating access points.
17
18 7. For all permanent actions that may impact owls or suitable habitat:
19
20 a. For 2 consecutive years before activities commence, a survey for owls will
21 be conducted according to an accepted protocol.
22
23 b. If owls are found, no actions will occur within 0.5 mi of any identified
24 nest site. If the nest site is unknown, no activity will occur within the
25 designated protected activity center.
26
27 c. Drilling and the establishment of permanent structures within 0.5 mi of a
28 location with suitable habitat will be avoided, unless the location has been
29 surveyed and found to not be occupied.
30
31 d. Noise will be reduced (e.g., by using hospital-grade mufflers) to 45 dBA
32 at 0.5 mi from suitable habitat, including canyon rims. The placement of
33 permanent noise-generating facilities shall be determined by a noise
34 analysis to ensure that noise does not encroach upon a 0.5-mi buffer for
35 suitable habitat, including canyon rims.
36
37 e. Disturbances to and within suitable habitat will be limited by staying on
38 approved routes.
39
40 f. The number of new access routes created by the project will be limited.
41
42 8. Surface disturbance (e.g., facilities, roads, pipelines) and vegetation removal
43 will be avoided within designated critical habitat and locations where any of
44 the primary constituent elements are present at the project scale.
45
46

1 **F.2.5 Southwestern Willow Flycatcher**

- 2
- 3 1. All potential habitats for southwestern willow flycatcher within prospective
- 4 lease areas will be identified prior to leasing for oil shale and tar sands
- 5 exploration and development. The BLM will notify prospective bidders of the
- 6 presence of flycatcher habitat and the need for special considerations for
- 7 managing this species.
- 8
- 9 2. Surveys for the southwestern willow flycatcher shall be conducted in project
- 10 areas near suitable habitat for the species and in project areas potentially
- 11 occupied by the species.
- 12
- 13 3. Project activities will maintain a 300-ft buffer from suitable riparian habitat all
- 14 year long.
- 15
- 16 4. Project activities within 0.25 mi of occupied breeding habitat will not occur
- 17 during the breeding season of May 1 to August 15.
- 18
- 19 5. The USFWS recommends that post-activity surveys for southwestern willow
- 20 flycatchers be conducted for any project or mitigation areas authorized by the
- 21 BLM. Surveys must be conducted by individuals who have been properly
- 22 trained in the approved survey protocol. Surveyors must be familiar with
- 23 and adhere to the general survey techniques and guidelines found in
- 24 Sogge et al. (2010). Surveyors must complete flycatcher survey training prior
- 25 to being permitted to conduct surveys. All reporting requirements must be
- 26 followed.
- 27
- 28 6. For projects that may alter or destroy habitat and are located in or near
- 29 occupied, suitable, potentially suitable, or potential habitat, the USFWS
- 30 recommends using fences instead of flags to delineate the project area.
- 31 Fencing is more visible to construction workers and more clearly demarcates
- 32 the construction zone.
- 33
- 34 7. If nest parasitism is monitored, when flycatcher nest parasitism exceeds 10%
- 35 of surveyed nests, the USFWS will be consulted with regard to implementing
- 36 any measures to reduce parasitism rates.
- 37
- 38

39 **F.2.6 Black-Footed Ferret**

- 40
- 41 1. Prior to leasing for oil shale or tar sands exploration or development, prairie
- 42 dog towns that could potentially be occupied by black-footed ferrets or are
- 43 within 1 mi of prairie dog towns that are occupied by black-footed ferrets
- 44 shall be surveyed and mapped by qualified individuals approved by the
- 45 BLM before surface-disturbing activities are conducted. Surveys shall be
- 46 in accordance with the 1989 *Black-Footed Ferret Survey Guidelines*

1 (USFWS 1989) or with other methods that the USFWS has reviewed and
2 approved. The BLM will notify prospective bidders of the presence of black-
3 footed ferrets and the need for special considerations managing this species.
4 Mapping shall be conducted in accordance with Biggins et al. (1993). If black-
5 footed ferrets or signs of them are observed within a prairie dog town or
6 complex where project-related activities are proposed, the BLM shall
7 coordinate Section 7 consultation or conferencing with the USFWS on the
8 proposed action. This measure applies to (1) all habitats occupied by ferrets
9 and (2) all suitable habitats within the oil shale and tar sands area. The BLM
10 will confer with the appropriate USFWS field office for definitions of suitable
11 habitat within each state.
12

13 In Wyoming, if no ferrets or signs of them are observed during the survey,
14 ground-disturbing activities may occur within 1 year of the date of survey
15 completion within the town surveyed. However, surveys shall be completed as
16 close to the date of project initiation as possible to avoid the possibility of a
17 ferret moving into the area after surveys have cleared the area. Alternatively,
18 all suitable habitat within the entire complex in which the town is located may
19 be surveyed. If no ferrets or sign are found, the complex will be designated
20 "ferret-free," and no further Section 7 review for the black-footed ferret will
21 be required for activities occurring within any prairie dog town within the
22 complex. Future observations of ferrets or their sign shall, however, require
23 re-initiation of Section 7 consultation. The BLM and the project proponent are
24 encouraged to work with the USFWS to "block clear" all prairie dog towns
25 within or contiguous to the analysis area. Future actions (including
26 maintenance, work over, and reclamation within towns previously cleared of
27 ferrets) may require additional survey work unless the entire complex
28 containing the town has been block cleared.
29

30 Results of all surveys shall be reported to the appropriate USFWS field office.
31 Results can include maps of the areas surveyed; information on surveyor
32 qualifications and the survey method, length, dates, weather, snow cover, and
33 results; and copies of field data sheets.
34

35 2. The placement of structures that provide suitable nest or perch sites for avian
36 predators will be avoided within large prairie dog towns. Garbage will be
37 contained so it does not attract coyotes, skunks, and other predators. This
38 measure will apply to (1) all habitats occupied by ferrets and (2) all suitable
39 habitat within the oil shale and tar sands area. The BLM will confer with the
40 appropriate USFWS field office regarding definitions of suitable habitat
41 within each state.
42

43 3. Reduced vehicle speeds at night will be posted and encouraged on roads in or
44 near occupied habitat to reduce the chance of vehicles causing mortalities.
45

- 1 4. Reclamation will be conducted so that impacts to active prairie dog colonies
2 are minimized. This measure applies to all suitable habitats within the oil
3 shale and tar sands area. The BLM will confer with the appropriate USFWS
4 field office regarding definitions of suitable habitat within each state.
5
- 6 5. In areas where black-footed ferrets could be encountered, employees,
7 operators, and contractors shall be educated on the natural history of the
8 black-footed ferret, the identification of ferrets and their sign, the potential
9 impacts associated with the transmission of diseases from dogs to ferrets,
10 activities that may affect ferret behavior, and ways to minimize these effects.
11 This measure applies to all suitable habitats within the oil shale and tar sands
12 area. The BLM will confer with the appropriate USFWS field office regarding
13 definitions of suitable habitat within each state.
14
- 15 6. Observations of black-footed ferrets, their sign, or carcasses shall be reported
16 to the nearest BLM and USFWS office within 24 hours. This measure applies
17 throughout the oil shale and tar sands area.
18
- 19 7. The use of “White-Tailed Prairie Dog Conservation Measures” (as revised)
20 will be encouraged in white-tailed prairie dog habitat.
21
- 22 8. Whenever possible, project activities will be designed to avoid any adverse
23 influence on prairie dog habitat occupied by black-footed ferrets. If adverse
24 impacts to occupied prairie dog habitat are unavoidable, activities will be
25 designed in coordination with the USFWS to (1) impact the smallest area
26 practicable, (2) impact those areas with the lowest prairie dog densities, and
27 (3) minimize habitat fragmentation in prairie dog towns occupied by black-
28 footed ferrets or towns suitable for their reintroduction. Off-site mitigation
29 may also be recommended. Impacts on black-footed ferret habitat will be
30 monitored to evaluate cumulative effects.
31
- 32 9. Whenever possible, project activities will be designed to not adversely impact
33 black-footed ferret populations. A monitoring program will be developed,
34 when necessary, to evaluate impacts. This measure applies to all habitats
35 occupied by ferrets within the oil shale and tar sands area.
36
- 37 10. Project activities in Uintah and Duchesne Counties, Utah, will be conducted
38 in a manner consistent with the Utah Division of Wildlife Resources 2007
39 publication, *Northeastern Region Black-Footed Ferret Management Plan*, and
40 the BLM 1999 publication, *Book Cliffs Resource Area Management Plan*
41 *Amendment for Black-Footed Ferret Reintroduction, Coyote Basin Area,*
42 *Utah.*
43
- 44 11. This measure applies specifically to the black-footed ferret management area
45 and subcomplexes described by the Utah Division of Wildlife Resources’
46 2007 publication, *Northeastern Region Black-Footed Ferret Management*

1 *Plan.* Within the boundaries of the three subcomplexes (Coyote Basin, Snake
2 John Reef, Bohemian Bottom), activities involving the development or
3 construction of features that could cause permanent surface disturbances will
4 be prohibited within 0.125 mi of the home range of any black-footed ferret.
5 Within the boundaries of the management area, if the observation of a ferret
6 has been recorded within the last 5 years, no surface disturbance will be
7 allowed within 0.44 mi of the observation location if the following two
8 criteria are met: (1) if the ferret observed in suitable habitat (the BLM will
9 confer with the appropriate USFWS field office regarding definitions of
10 suitable habitat within the management area) and (2) if the ferret has
11 established residency in the immediate locale (i.e., if a documented home
12 range has been established). The appropriate size of the protected area
13 surrounding a ferret's home range may be adjusted in coordination with the
14 USFWS to coincide with future research and new information and pursuant to
15 the relevant local, site-specific species management plan, if available.
16
17

18 **F.2.7 Canada Lynx³**

- 19
20 1. Within a Lynx Analysis Unit (LAU), ensure that mapping of lynx habitat,
21 nonhabitat, and denning habitat occurs. Foraging habitat and topographic
22 features important for lynx movement shall also be mapped. All lynx habitat
23 within an LAU shall be identified as being in suitable or unsuitable condition.
24 This effort involves interagency coordination where LAUs cross
25 administrative boundaries.
26
- 27 2. Disturbance within each LAU shall be limited to 30% of the suitable habitat
28 within the LAU. If 30% of the habitat within an LAU is currently in
29 unsuitable condition, no further reduction in the amount of suitable conditions
30 shall be allowed to occur as a result of management activities. To assess
31 cumulative effects, oil and gas production and transmission facilities, mining
32 activities and facilities, dams, timber harvests, and agricultural lands shall be
33 mapped on public lands, and projects on adjacent private lands shall be
34 evaluated. This effort will involve interagency coordination where LAUs
35 cross administrative boundaries, primarily with the U.S. Forest Service.
36
- 37 3. Management actions shall not change more than 15% of lynx habitat within an
38 LAU to an unsuitable condition within a 10-year period. This effort will
39 involve interagency coordination where LAUs cross administrative
40 boundaries.
41
- 42 4. Denning habitat shall be maintained in patches that are generally larger than
43 5 acres and compose at least 10% of lynx habitat. Where less than 10% is
44 currently present within an LAU, any management actions that will delay

³ Landscape linkages may be the only issues.

- 1 development of denning habitat structures will be deferred. This effort will
2 involve interagency coordination where LAUs cross administrative
3 boundaries.
4
- 5 5. Key linkage areas that may be important in providing landscape connectivity
6 within and between geographic areas across all ownerships will be identified
7 by using the best available science.
8
- 9 6. Habitat connectivity within and between LAUs will be maintained.
10
- 11 7. Observations of lynx (tracks or sightings, along with date, location, and
12 habitat) will be documented and provided to the state natural heritage
13 database. An annual update on all sightings will be requested from the
14 database for review.
15
- 16 8. If there has been a large wildfire, a post-disturbance assessment will be
17 conducted prior to salvage harvest, particularly in stands that were formerly
18 in late successional stages, to evaluate their potential for lynx denning and
19 foraging habitat.
20
- 21 9. On projects that require over-snow access, such access will be restricted to
22 designated routes.
23
- 24 10. Within lynx habitat, the BLM shall ensure that key linkage areas and potential
25 highway crossing areas are identified by using the best available science.
26
- 27 11. The BLM shall ensure that proposed land exchanges, land sales, and special
28 use permits are evaluated for their effects on key linkage areas.
29
- 30 12. If activities in lynx habitat are proposed, the BLM shall ensure that
31 stipulations and conditions of approval for limitations on the timing of
32 activities and surface use and occupancy are developed for leasing, and that
33 more site-specific conditions of approval are developed at the permitting
34 stage. Examples include requiring that activities not be conducted at night
35 (when lynx are active) and avoiding activity near denning habitat during the
36 breeding season (April or May to July) to protect vulnerable kittens.
37
- 38 13. The continuation of foraging habitat in proximity to denning habitat shall be
39 provided for.
40
- 41 14. Habitat conditions that support dense, horizontal, understory cover and high
42 densities of snowshoe hares shall be provided through time. An example
43 of such a habitat is mature, multistoried, conifer vegetation. Vegetation
44 management, including timber harvests and the use of prescribed fires, will
45 focus on areas that have the potential to improve snowshoe hare habitat

1 (dense, horizontal cover) but presently have poorly developed understories
2 of little value to snowshoe hares.

- 3
- 4 15. Areas where high total road densities (more than 2 mi of roads per mi²)
5 coincide with lynx habitat shall be determined, and roads in those areas will
6 be priorities for seasonal restrictions or reclamation.
- 7
- 8 16. Public use of temporary roads constructed for project activities will be limited.
9 New roads, especially at the entrance, will be designed so they can be
10 effectively closed upon completion of project activities. Upon project
11 completion, these roads will be reclaimed or obliterated.
- 12
- 13 17. The building of roads directly on ridge tops or areas identified as important
14 for lynx habitat connectivity will be minimized.
- 15
- 16 18. Where needed, measures to reduce mortality risk, such as wildlife fencing and
17 associated underpasses or overpasses, will be developed.
- 18
- 19 19. Existing snowshoe hare and red squirrel habitats will be protected.
- 20
- 21 20. Remote sensing equipment will be used and bunch maintenance activities will
22 be implemented to reduce activity in the area and to reduce the compaction of
23 snow.
- 24
- 25

26 **F.2.8 Threatened, Endangered, and Proposed Plants⁴**

- 27
- 28 1. All potential habitat for proposed, candidate, and listed species shall be
29 identified prior to leasing for oil shale or tar sands exploration and
30 development. The BLM will notify prospective bidders of the presence of
31 these sensitive plant species and the need for special considerations for
32 managing these species. Within these potential habitat areas, surveys that
33 follow established protocols shall be conducted to better understand these
34 populations and where conservation efforts shall be focused.
- 35
- 36 On leased parcels with the potential to impact sensitive plant species, surveys
37 that follow established protocols will be conducted prior to any development
38 activities. Surveys shall be conducted when the plant can be detected and
39 during appropriate flowering periods. Surveys shall extend at least 600 ft
40 beyond the perimeter of work areas. Surveys are generally valid for 1 year.
- 41
- 42 2. Consistent with existing or current recovery plans, the proposed action will be
43 designed to support recovery objectives. For example:
- 44

⁴ Refer to the PEIS for a list of all threatened, endangered, and proposed plants.

- 1 a. Designs will prevent surface runoff from work areas from entering plant-
2 occupied habitat.
3
- 4 b. Construction will occur below and away from the slope of occupied
5 habitat, where feasible, to avoid slope failure or accelerated erosion.
6
- 7 c. No surface disturbance will occur within 300 ft of a listed plant. If an area
8 that is less than 600 ft from a listed plant must be disturbed (e.g., for
9 mining, drilling, roads, pipelines), the edge shall be temporarily fenced to
10 keep disturbance from further approaching the listed plant's habitat. To
11 avoid working in listed plant habitats and to avoid drawing attention to
12 listed plants, the edge of disturbance, not the nearby plant population, shall
13 be fenced. This measure could be modified with the approval of the BLM
14 and USFWS.
15
- 16 d. If a surface disturbance must be located less than 600 ft from a listed
17 plant, appropriate dust-abatement actions, commensurate with the level of
18 use, must be conducted, in consultation with the USFWS and BLM.
19
- 20 3. If ground-disturbing activities occur within 600 ft of listed plants, the plants
21 shall be monitored in accordance with the 1998 publication, *Measuring and*
22 *Monitoring of Plant Populations*, BLM Technical Reference 1730-1, during
23 the blooming period to track the plants' health and vigor and the occurrence
24 of dust transported from project activities. Data shall also include a site
25 description with global positioning system (GPS) coordinates, the size of
26 the area occupied, the estimated number and range in age of the plants,
27 and evidence of habitat disturbance and plant damage or mortality. Post-
28 construction monitoring for invasive species must also be conducted. Annual
29 reports shall be provided to the BLM and USFWS.
30
- 31 4. "Translocation" (transplanting) will not be considered as a conservation
32 measure.
33
- 34 5. Vehicle travel will avoid suitable and occupied habitat.
35
- 36 6. In consultation with USFWS, projects that remove topsoil in areas of suitable
37 habitat for listed species shall be evaluated. The topsoil shall be set aside and
38 replaced when ground work is completed to preserve the seed bank and
39 associated mycorrhizal species and to discourage invasive species.
40
- 41 7. When possible, revegetation shall be limited to native species that will not
42 compete with the rare species at the site. Revegetation projects shall require
43 a site-specific plan for areas with listed plant species, to be developed in
44 consultation with the BLM and USFWS.
45

- 1 8. Protective stipulations for endangered or threatened species shall include
2 appropriate measures to protect pollinator species that have been identified.
3
- 4 9. When listed plant species are near project areas, dust control measures will be
5 determined in consultation with the BLM and USFWS. These measures shall
6 be employed to minimize the deposition of fugitive dust on plant surfaces.
7
- 8 10. For riparian and wetland-associated species (e.g., Ute ladies'-tresses), any
9 water extraction or disposal practices shall not result in a change in the
10 hydrologic regime outside the range of natural variability.
11
- 12 11. Produced oil, water, or condensate tanks will be placed in centralized
13 locations away from occupied habitat. Evaporation ponds shall be located so
14 their overspray falls at least 600 ft away from listed plant locations, if such
15 ponds are necessary.
16

17 **F.2.9 Species Determined Not To Be within the Action Area**

18 **F.2.9.1 Gray Wolf**

19 (Per discussion with USFWS, wolves are not within the action area, so they will not be
20 addressed in the PEIS or biological assessment [BA].)
21

22 **F.3 CANDIDATE ANIMAL SPECIES DETERMINED TO BE WITHIN THE** 23 **ACTION AREA**

24 **F.3.1 Greater Sage-Grouse**

25 The greater sage-grouse may occur in lease areas in all three states. Suggested measures
26 for the management of greater sage-grouse populations and their habitat are provided in
27 Section 4.8.1.4. These measures include the following:
28

- 29 1. Identify and avoid both local (daily) and seasonal migration routes.
30
- 31 2. Consider greater sage-grouse and sagebrush habitats when designing,
32 constructing, and utilizing project access roads and trails.
33
- 34 3. When possible, avoid siting energy developments in breeding habitats.
35
- 36 4. Adjust the timing of activities to minimize disturbance to greater sage-grouse
37 during critical periods.
38

- 1 5. When possible, locate energy-related facilities away from active leks or other
2 greater sage-grouse habitat.
- 3
- 4 6. When possible, restrict noise levels to 10 dB above background noise levels at
5 lek sites.
- 6
- 7 7. Minimize nearby human activities when birds are near or on leks.
- 8
- 9 8. As practicable, do not conduct surface-use activities within crucial greater
10 sage-grouse wintering areas from December 1 through March 15.
- 11
- 12 9. Maintain sagebrush communities on a landscape scale.
- 13
- 14 10. Provide compensatory habitat restoration for impacted sagebrush habitat.
- 15
- 16 11. Avoid the use of pesticides at greater sage-grouse breeding habitats during the
17 brood-rearing season.
- 18
- 19 12. Develop and implement appropriate measures to prevent the introduction or
20 dispersal of noxious weeds.
- 21
- 22 13. Avoid creating attractions for raptors and mammalian predators in greater
23 sage-grouse habitat.
- 24
- 25 14. Consider measures to mitigate impacts at off-site locations to offset the
26 unavoidable alteration and reduction of greater sage-grouse habitat at the
27 project site.
- 28
- 29 15. When possible, avoid establishing artificial water bodies (e.g., stormwater and
30 liquid industrial wastewater ponds) that could serve as breeding habitat for
31 mosquitoes.
- 32

34 **F.3.2 Yellow-Billed Cuckoo**

35
36 (This species is within the action area only in Utah, and because it is a candidate species,
37 it will not be addressed in the BA, but these conservation measures will be in the PEIS.)

- 38
- 39 1. All riparian areas shall be surveyed to identify suitable habitat for this species
40 prior to leasing for oil shale or tar sands exploration and development. The
41 BLM will notify prospective bidders of the presence of these sensitive plant
42 species and the need for special considerations for managing these species.
- 43
- 44 2. Potential habitat for this species shall be avoided by maintaining a 0.25-mi
45 buffer. If suitable habitat for this species is present within a proposed

- 1 development area, surveys shall be conducted to determine species
2 occupancy.
3
- 4 3. If mining activities cannot be avoided in riparian habitat, the project shall be
5 designed to avoid the removal of large cottonwood trees and shall not occur
6 from June 1 through August 1.
7
- 8 4. To avoid direct impacts on or changes in riparian habitat, stream channel
9 morphology or annual streamflow regimes in suitable habitat shall not be
10 adversely modified.
11
- 12 5. Non-surface-disturbing activities within yellow-billed cuckoo habitat that will
13 have adverse effects on the bird or its habitat (e.g., boat and raft landings,
14 outfitting camps, firewood collection) shall be prohibited within 0.25 mi of
15 occupied habitat.
16
- 17 6. Pesticides shall not be applied within 0.25 mi of habitat occupied by the
18 yellow-billed cuckoo.
19
- 20 7. If technically feasible, biological control shall be used in place of chemical
21 pest control.
22
23

24 **F.4 MIGRATORY BIRDS**

25
26 During site-specific post-leasing activities, impacts on migratory birds and their habitats
27 will be evaluated and minimized, with emphasis on species that are on *Birds of Conservation*
28 *Concern 2008* (USFWS 2008) and species that are listed among the “Partners in Flight” Priority
29 Species. To help meet the responsibilities identified in Executive Order 13186 (“Responsibilities
30 of Federal Agencies to Protect Migratory Birds”), BLM recommends that (a) exploration and
31 mining activities be conducted outside critical breeding seasons for migratory birds,
32 (b) temporary and long-term habitat losses be minimized, and (c) unavoidable habitat losses be
33 compensated for.
34
35

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