

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

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**CONSERVATION MEASURES**

The following conservation measures were developed for the oil shale and tar sands program through consultation between the U.S. Department of the Interior, Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service (USFWS) to support the conservation of species listed under the Endangered Species Act (ESA). For purposes of the 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 the USFWS to ensure that the conservation measures presented here are consistent with those currently applied to other land management actions where associated impacts are similar. However, it is presumed that potential impacts from development alternatives described in the PEIS are likely to vary in scale and intensity when compared with land management actions previously considered (e.g., oil and gas exploration and production, surface mining, and underground mining). Hence, final conservation measures will be developed commensurate with the anticipated level of impact on the selected alternatives and will be consistent with agency policies. Current BLM guidance on similar actions (e.g., fluid mineral resources) requires that the least restrictive stipulation that effectively accomplishes the resource objectives or resource uses for a given alternative should be used while remaining in compliance with the ESA.

**Conservation Measures Generally Applicable to All Listed Species**

1. Surveys will be required prior to operations unless species occupancy and distribution information for the area is complete and available. All surveys must be conducted by qualified individual(s) approved by BLM. For bald eagles and Mexican spotted owls (and other raptors), surveys should 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.
2. Lease activities, upon initiation of 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 reinitiated.
3. Water production will be managed to ensure maintenance or enhancement of riparian habitat and surface water quality.
4. Avoid loss of riparian and wetland habitats where possible with mining and in situ processing. Minimize loss of riparian and wetland habitat with roads, pipelines, and other ancillary facilities. Restore wetland and riparian habitat when avoidance with facilities is not possible. Any incidental take statement (if warranted) will need to be based on an estimate of avoidance and if unavoidable, quantify extent of potential take.

5. Transportation management plans should be developed and used as a means for minimizing habitat fragmentation and destruction.

### **Species Specific Conservation Measures**

#### **Colorado River Endangered Fishes—Bonytail, Colorado Pikeminnow, Humpback Chub, Razorback Sucker**

1. Within 0.5 mi of critical habitat; a) avoid all mining and drilling activities and, b) minimize surface disturbance and vegetation removal for roads, pipelines, water diversion and acquisition facilities, and other ancillary facilities. When surface disturbance for any of the features in item b above is necessitated within 0.5 mi of critical habitat, the BLM should confer with USFWS to minimize potential impacts to critical habitat and/or endangered fish.
2. For tributaries to the major rivers that contain listed fish species or their designated critical habitat, drilling or mining will not occur within the 100-year floodplains or riparian corridors that are within the zone of influence of the major rivers.
3. To avoid excessive stream sedimentation during the spawning period, avoid construction activities (e.g., for roads, pipelines, utilities) within critical habitat from April 1 through September 30 of any year.
4. Avoid the installation of water diversion structures that may pose a risk to the Colorado River fishes or their critical habitat (e.g., minimize entrainment or impingement by using screens, baffles).
5. Avoid the release of selenium into surface waters, and where possible, implement measures to reduce selenium concentrations in the Upper Colorado River Basin. For example, decrease erosion in areas with selenium-rich soils (e.g., shale-derived soils), maintain adequate vegetation cover on work areas where possible, control ephemeral streamflow with water spreading structures, do not irrigate in areas with selenium-rich soils, and avoid impacting selenium-rich soils on steep slopes (>50%). If selenium-rich slag/waste piles are created, they should be isolated and located so that this material does not reach critical habitat.
6. All new pipelines and other controlled surface uses crossing any critical or occupied habitat of the Colorado River fishes will adhere to the following stipulations:
  - a. Pipelines shall not be constructed in known spawning sites or backwaters.
  - b. No work in the active river channel will take place between July 1 and September 30. This will avoid adverse effects from sedimentation during spawning, and when larval fishes are drifting in the river channel.
  - c. After construction, the streambed will be returned to preconstruction contours.
  - d. Pipelines transporting substances other than water will have automatic shut-off valves.
  - e. Pipelines transporting substances other than water will be double-walled where they cross the 100-year floodplain and river.
  - f. A spill/leak contingency plan will be developed prior to pipeline use.

7. Implement the Utah Oil and Gas Pipeline Crossing Guidance (from BLM National Science and Technology Center).
8. If water is obtained for project-related activities from any surface water source (stream, pond, etc.), or from any groundwater source that has a connection to surface water, the BLM will require that all water withdrawals undergo appropriate Section 7 consultation in accordance with procedures existing at the time of the proposed action. Any applicant for a water withdrawal less than the Colorado River Recovery Program sufficient progress threshold (in 2007, 4,500 ac-ft/yr) shall pay the appropriate depletion fee, depending on whether the depletion is a historical or new depletion. Only new depletions over 100 ac-ft/yr are subject to the fee requirement. Projects withdrawing more than the sufficient progress threshold shall complete an additional item from the Colorado River Recovery Implementation Plan Recovery Action Plan as agreed to by the USFWS (new depletions would also be subject to the depletion fee).

### **Colorado River Cutthroat Trout**

1. Maintain a minimum 0.25-mi buffer (both sides) of occupied Colorado River cutthroat trout streams and upstream tributaries. The buffer would be extended beyond the 0.25-mi minimum in areas where slopes exceed 50%; the buffer would extend out to where the land is relatively level. The idea is to keep any sediment from reaching the occupied Colorado River cutthroat trout reaches by making sure that mining and drilling take place on flat ground in areas where Colorado River cutthroat trout occur. Linear features such as roads and pipelines may be allowed within the buffer zones. Keep in mind that there are only a handful of known Colorado River cutthroat trout populations in the oil shale and tar sands planning area, and these conservation measures would affect only a very small portion of the area proposed for leasing (5% or less).
2. No water withdrawals will occur from waters occupied by Colorado River cutthroat trout, based on current information.
3. Oil shale and tar sands activities will be consistent with the “Conservation Agreement for Colorado River Cutthroat Trout (*Oncorhynchus clarkia pleuriticus*)” for the states of Colorado, Utah, and Wyoming (June 2006).

### **Bald Eagle<sup>1</sup>**

1. A year-round avoidance of 0.5-mi of known bald eagle nests if topographic and/or vegetative buffers exist or of areas within 1 mi if nest is in line of sight of activity will be established. This avoidance requirement may be adjusted based on a demonstration of nonoccupancy during the last 7 years. Any modification will be in coordination with USFWS.

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

2. A year-round avoidance of 0.25-mi if topographic and/or vegetation buffers exist to 1-mi if roost is in line of sight of activity will be established for all known bald eagle winter roost sites. This avoidance requirement may be adjusted based on a demonstration of nonoccupancy during the last 7 years. Any modification will be in coordination with the USFWS.
3. Avoid loss or disturbance to riparian habitats containing cottonwoods, conifers, or other tree species that, when mature, may provide roost or nest trees for bald eagles. Minimize loss of any other riparian plant species (including box elders, willows, and river birch).
4. The USFWS recommends that the BLM and contractors be informed of the risk or potential for wildlife vehicle collision (particularly bald eagles) in the project area and requested to limit vehicle speed to reduce such potential. In addition, contractors should move any big game carcasses found along project area roads away from the roadway by 30 ft (generally 60-ft-wide ROWs) to minimize the potential for bald eagle and vehicle collisions while eagles feed on roadside carrion. Furthermore, the BLM and contractors, in an additional effort to protect bald eagles, will coordinate with appropriate officials for necessary removal of any big game carcasses along county or state roads.
5. To preclude bald eagles or other raptors from nesting on human-made structures such as cell phone towers and condensate tanks and to avoid impeding operation or maintenance activities, install antiperching devices on structures to discourage use by eagles and other raptors.
6. Bury electric lines, where practicable, especially in areas of high bald eagle use. If lines cannot be buried, power lines will be built at a minimum, to standards identified by the Avian Power Line Interaction Committee (2006) to minimize electrocution potential (see *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006*; available at [http://www.eei.org/products\\_and\\_services/descriptions\\_and\\_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 the additional specifications listed below. The project proponent should ensure that these additional standards to minimize bald eagle mortality associated with electric utility distribution lines will be incorporated into the stipulations for all project actions. It should be noted that these measures vary in their effectiveness to minimize mortality, and may be modified as they are tested in the field and laboratory. Local habitat conditions should be considered in their use. The USFWS does not endorse any specific product that can be used to prevent and/or minimize mortality. The following recommendations should be incorporated into the design plan of new distribution lines or when modifying existing facilities.

For new distribution lines and facilities:

- a. Raptor-safe structures (e.g., with increased conductor-conductor spacing) that address adequate spacing for bald eagles (i.e., minimum of 60 in. for bald eagles) are to be used.
- b. Equipment installations (e.g., overhead service transformers, capacitors, reclosers) should be made bald-eagle safe (e.g., by insulating the bushing conductor terminations and by using covered jumper conductors).

- c. Jumper conductor installations (e.g., corner and tap structures) should be made bald-eagle safe by using covered jumpers or providing adequate separation.
- d. Arrestor and cutout covers should be employed when necessary.
- e. Lines should avoid high avian-use areas such as wetlands, prairie dog towns, and grouse leks.

For modification of existing facilities:

- a. Problem structures that include dead ends, tap or junction poles, transformers, reclosers and capacitor banks, or other structures with less than 60 in. between conductors or a conductor and ground should be identified and rectified.
  - b. Exposed jumpers should be covered.
  - c. Any pole-top ground wires should be capped.
  - d. Grounded guy wires should be isolated by installing an insulating link.
  - e. On transformers, install insulated bushing covers, covered jumpers, and cutout covers and arrestor covers, if necessary.
  - f. When bald eagle mortalities occur on existing lines and structures, bald eagle protection measures should be applied (e.g., modify for raptor-safe construction, install safe perches or perching deterrents, nesting platforms or nest-deterrent devices).
  - g. In areas where midspan collisions are a problem, install line-marking devices that have been proven effective. All transmission lines that span streams and rivers should maintain proper spacing and have markers installed.
  - h. Poles will be moved if topographic issues or impacts to vegetative or wildlife resources were identified at the construction site.
7. When constructing communication towers, refer to the USFWS *Guidance on the Siting, Construction, Operation, and Decommissioning of Communication Towers*, which can be found at [http://www.fws.gov/migratory\\_birds/issues/towers/comtow.html](http://www.fws.gov/migratory_birds/issues/towers/comtow.html).

## **Mexican Spotted Owl<sup>2</sup>**

1. Within the range of the Mexican spotted owl, avoid surface disturbance where suitable nesting habitat for the species occurs (steep-walled, rocky canyons, typically with a closed-canopy of mature, mixed coniferous forest) (see the recovery plan [USFWS 1995] for the spotted owl, particularly Table III.B.1). (The range of the Mexican spotted owl published in the recovery plan should be extended to include the individuals observed within Dinosaur National Monument.)
2. Within areas of oil shale and tar sands potential in Utah and Colorado, prior to leasing of mineral rights, the Bureau will develop a map of BLM lands with Mexican spotted owl habitat that is comprised of areas with steep slopes (>40% slope), canyons and rocky outcrops overlapping dense, mixed-conifer vegetation (canopy cover greater than 40% if data are available). This mapping effort would be considered a broad-based approach from which more specific and intensified habitat analyses could be initiated.

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<sup>2</sup> Contact local USFWS office for breeding season dates specific to a given area.

3. Where possible, conduct field surveys for the Mexican spotted owl in areas of suitable habitat in order to gain a better understanding of Mexican spotted owl distribution and status throughout areas of oil shale and tar sands potential in Utah and Colorado. Field surveys should emphasize areas that have not been previously or recently surveyed. Areas of particular interest include the Book Cliffs and areas surrounding Dinosaur National Monument.
4. Unless species occupancy and distribution information is complete and available, field surveys shall occur in areas where proposed human activities may remove or modify Mexican spotted owl habitat or otherwise adversely affect the species. Current USFWS survey protocol will be followed. Existing protocols require that four surveys be conducted each season for two consecutive seasons. All surveys must be conducted by a qualified individual(s) approved by BLM.
5. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mi of suitable owl habitat. Determine potential effects of actions to owls and their habitat. Document type of activity, acreage and location of direct habitat impacts, and type and extent of indirect impacts relative to location of suitable owl habitat. Document if action is temporary or permanent. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances (i.e., creation of a permanent structure).
6. For all temporary actions that may impact owls or suitable habitat:
  - a. If the action occurs entirely outside of the owl breeding season (e.g., March 1 to August 31 in Utah), and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
  - b. If action will occur during a breeding season, a survey for owls should be performed prior to commencing activity. If owls are found, activity must be delayed until outside of the breeding season.
  - c. Rehabilitate access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
7. For all permanent actions that may impact owls or suitable habitat:
  - a. Survey two consecutive years for owls according to accepted protocol prior to commencing activities.
  - b. If owls are found, no actions will occur within 0.5 mi of identified nest site. If the nest site is unknown, no activity will occur within the designated protected activity center.
  - c. Avoid drilling and permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied.
  - d. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5-mi from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure that noise does not encroach upon a 0.5-mi buffer for suitable habitat, including canyon rims.

- e. Limit disturbances to and within suitable habitat by staying on approved routes.
  - f. Limit new access routes created by the project.
8. Avoid surface disturbance (e.g., facilities, roads, pipelines) and vegetation removal within designated critical habitat where any of the primary constituent elements are present at the project scale.

### **Southwestern Willow Flycatcher**

1. In project areas potentially occupied by the southwestern willow flycatcher, surveys for the southwestern willow flycatcher should be conducted.
2. Project activities will maintain a 300-ft buffer from suitable riparian habitat year long.
3. Project activities within 0.25 mi of occupied breeding habitat will not occur during the breeding season of May 1 to August 15.
4. The USFWS recommends postactivity surveys for southwestern willow flycatchers for any project or mitigation areas authorized by the BLM. Surveys must be conducted by individuals who have been properly trained in approved survey protocol. Surveyors must be familiar with and adhere to the general survey techniques and guidelines in Sogge et al. (1997). Flycatcher survey training must be completed prior to being permitted to conduct surveys. All reporting requirements must be followed.
5. For projects that may alter or destroy habitat that are in or near occupied, suitable, potentially suitable, or potential habitat, the USFWS recommends using fencing instead of flagging to delineate the project area. Fencing is more visible to construction workers and more clearly demarcates the construction zone.
6. If nest parasitism is monitored, when flycatcher nest parasitism exceeds 10% of surveyed nests, consult with USFWS to implement measures to reduce parasitism rates.

### **Black-footed Ferret**

1. Prairie dog towns potentially occupied by black-footed ferrets or within 1.5 km of prairie dog towns occupied by black-footed ferrets should be surveyed and mapped by qualified individuals approved by BLM before surface-disturbing activities are conducted. Surveys should be in accordance with the 1989 *Black Footed Ferret Survey Protocol* or other methods upon USFWS review and approval. Mapping should be conducted in accordance with Biggins et al. (1993). Should black-footed ferrets or signs of them be observed within a prairie dog town or complex where project-related activities are proposed, the federal agency shall coordinate Section 7 consultation or conferencing with the USFWS on the proposed action. This measure applies to: (1) all habitats occupied by ferrets and (2) all suitable habitats within the oil shale and tar sands area. The BLM will confer with the appropriate USFWS Field Office for definitions of suitable habitat within each state.

In Wyoming (non-10(j) populations), in the event that no ferrets or signs of them are observed during the survey, ground-disturbing activities may occur within 1 year of the date of survey completion within the town surveyed. However, surveys should be completed as close to the date of project initiation as possible to avoid the possibility of a ferret moving into the area after surveys have cleared the area. Alternatively, all suitable habitat within the entire complex in which the town is located may be surveyed and, if no ferrets or sign are found, the complex will be designated “ferret-free” and no further Section 7 review for the black-footed ferret will be required for activities occurring within any prairie dog town within the complex. Future observations of ferrets or their sign shall, however, require reinitiation of Section 7 consultation. The BLM and the project proponent are encouraged to work with the USFWS to block clear all prairie dog towns within or contiguous with the analysis area. Future actions, including maintenance, work over, and reclamation within towns previously cleared of ferrets may require additional survey work unless the entire complex containing the town has been block cleared.

Results of all surveys shall be reported to the appropriate USFWS Field Office, including maps of areas surveyed, surveyor qualifications, method of survey, and length of survey, date, weather, snow cover, survey results, and copies of field data sheets.

2. Where possible, avoid placement of structures that provide suitable nest or perch sites for avian predators within ferret habitat. Ensure that garbage is contained to prevent attraction by coyotes, skunks, and other predators. This measure applies to: (1) all habitats occupied by ferrets and (2) all suitable habitat within the oil shale and tar sands area. The BLM will confer with the appropriate USFWS Field Office definitions of suitable habitat within each state.
3. Where possible, post and encourage reduced vehicle speeds at night on roads in or near occupied habitat to reduce chances of vehicular mortalities.
4. Ensure that reclamation is conducted so that impacts to active prairie dog colonies are minimized. This measure applies to all suitable habitats within the oil shale and tar sands area. The BLM will confer with the appropriate USFWS Field Office for definitions of suitable habitat within each state.
5. In areas where black-footed ferrets could be encountered, employees, operators, and contractors shall be educated on the natural history of the black-footed ferret, identification of ferrets and their sign, potential impacts for disease transmission from dogs to ferrets, activities that may affect ferret behavior, and ways to minimize these effects. This measure applies to all suitable habitats within the oil shale and tar sands area. The BLM will confer with the appropriate USFWS Field Office for definitions of suitable habitat within each state.
6. Observations of black-footed ferrets, their sign, or carcasses shall be reported to the nearest BLM and USFWS office within 24 hours. This measure applies throughout the oil shale and tar sands area.

7. Encourage the use of *White-tailed Prairie Dog Conservation Measures* (as revised), in white-tailed prairie dog habitat.
8. Whenever possible, project activities will be designed to avoid adverse influence on prairie dog habitat occupied by black-footed ferrets. If adverse impacts to occupied prairie dog habitat are unavoidable, activities will be designed in coordination with the USFWS to (1) impact the smallest area practicable, (2) impact those areas with the lowest prairie dog densities, and (3) minimize habitat fragmentation in prairie dog towns occupied by black-footed ferrets or those towns suitable for reintroduction. Offsite mitigation may also be recommended. Impacts to black-footed ferret habitat will be monitored to evaluate cumulative effects.
9. Whenever possible, project activities will be designed to not adversely impact black-footed ferret populations. A monitoring program will be developed, when necessary, to evaluate impacts. This measure applies to all habitats occupied by ferrets within the oil shale and tar sands area.
10. Project activities in Uintah and Duchesne Counties, Utah, will be conducted consistent with the Division of Wildlife Resources' 2007 *Northeastern Region Black-Footed Ferret Management Plan* and the BLM's 1999 *Book Cliffs Resource Area Management Plan Amendment for Black-footed Ferret Reintroduction, Coyote Basin Area, Utah*.
11. This measure applies specifically to the black-footed ferret management area and subcomplexes described by the Utah Division of Wildlife Resources' 2007 *Northeastern Region Black-Footed Ferret Management Plan*. Within the boundaries of the three subcomplexes (Coyote Basin, Snake John Reef, Bohemian Bottom), activities involving the development or construction of permanent surface disturbances will be prohibited within one-eighth mi of the home range of any black-footed ferret. Within the boundaries of the management area, if a ferret observation is recorded, or has been recorded within the last 5 years, no surface disturbance will be allowed within 0.44 mi (about 700 m) of the observation location if the following two criteria are met: (1) the ferret is/was observed in suitable habitat (the BLM will confer with the appropriate USFWS Field Office for definitions of suitable habitat within the management area) and (2) the ferret has established residency in the immediate locale (i.e., a documented home range has been established). The appropriate size of the protected area surrounding a ferret's home range may be adjusted in coordination with the USFWS according to future research and new information, and pursuant to the relevant local, site-specific species management plan, if available.

### **Canada Lynx<sup>3</sup>**

1. Within a Lynx Analysis Unit (LAU), ensure that mapping of lynx habitat, nonhabitat, and denning habitat occurs. Also map foraging habitat, and topographic features important for lynx movement. Identify whether all lynx habitat within an LAU is in suitable or unsuitable

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<sup>3</sup> Landscape linkages may be the only issues.

condition. May involve interagency coordination where LAUs cross administrative boundaries.

2. Limit disturbance within each LAU to 30% of the suitable habitat within the LAU. If 30% of the habitat within an LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result of management activities. Map oil and gas production and transmission facilities, mining activities and facilities, dams, timber harvest, and agricultural lands on public lands and evaluate projects on adjacent private lands, in order to assess cumulative effects. This will involve interagency coordination where LAUs cross administrative boundaries, primarily with the U.S. Forest Service.
3. Management actions shall not change more than 15% of lynx habitat within an LAU to an unsuitable condition within a 10-year period. This will involve interagency coordination where LAUs cross administrative boundaries.
4. Maintain denning habitat in patches generally larger than 5 acres, composing at least 10% of lynx habitat. Where less than 10% is currently present within an LAU, defer any management actions that would delay development of denning habitat structure. This will involve interagency coordination where LAUs cross administrative boundaries.
5. Ensure that key linkage areas that may be important in providing landscape connectivity within and between geographic areas across all ownerships are identified, using best available science.
6. Ensure that habitat connectivity within and between LAUs is maintained.
7. Document lynx observations (tracks, sightings, along with date, location, and habitat) and provide these to the state natural heritage database, and request an annual update from them on all sightings for review.
8. In the event of a large wildfire, ensure that a postdisturbance assessment prior to salvage harvest is conducted, particularly in stands that were formerly in late successional stages, to evaluate potential for lynx denning and foraging habitat.
9. On projects where over-snow access is required, ensure that use is restricted to designated routes.
10. Within lynx habitat, the BLM shall ensure that key linkage areas and potential highway crossing areas are identified, using best available science.
11. The BLM shall ensure that proposed land exchanges, land sales, and special use permits are evaluated for effects on key linkage areas.
12. If activities are proposed in lynx habitat, the BLM shall ensure that stipulations and conditions of approval for limitations on the timing of activities and surface use and occupancy are developed for leasing, and that more site-specific conditions of approval are

developed at the permitting stage. Examples include requiring that activities not be conducted at night, when lynx are active; and avoiding activity near denning habitat during the breeding season (April or May to July) to protect vulnerable kittens.

13. Provide for the continuation of foraging habitat in proximity to denning habitat.
14. Provide habitat conditions through time that support dense horizontal understory cover and high densities of snowshoe hares. This includes, for example, mature multistoried conifer vegetation. Focus vegetation management, including timber harvest and the use of prescribed fire, in areas that have potential to improve snowshoe hare habitat (dense horizontal cover) but that presently have poorly developed understories that have little value to snowshoe hares.
15. Determine where high total road densities (>2 mi per mi<sup>2</sup>) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas.
16. Limit public use on temporary roads constructed for project activities. Design new roads, especially the entrance, for effective closure upon completion of project activities. Upon project completion, reclaim or obliterate these roads.
17. Minimize building of roads directly on ridgetops or areas identified as important for lynx habitat connectivity.
18. Where needed, develop measures such as wildlife fencing and associated underpasses or overpasses to reduce mortality risk.
19. Protect existing snowshoe hare and red squirrel habitat.
20. Use remote sensing equipment and bunch maintenance activities to reduce activity in the area as well as reduce the compaction of snow.

#### **Threatened, Endangered, and Proposed Plants<sup>4</sup>**

1. Surveys for listed plants will be conducted prior to ground disturbance wherever there is the potential for their occurrence in projects areas. Surveys in suitable habitat should be conducted when the plant can be detected, and during appropriate flowering periods. Documentation should include, but not be limited to, individual plant locations and suitable habitat distributions, and all surveys must be conducted by qualified individuals approved by the BLM. Surveys should extent at least 200 m beyond the perimeter of work areas. Surveys are generally valid for one year.
2. Consistent with existing or current recovery plans, the proposed action will be designed to support recovery objectives. For example:

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

- a. Designs will prevent surface runoff from work areas from entering plant occupied habitat.
  - b. Construction will occur below and away from the slope of occupied habitat, where feasible, to avoid slope failure or accelerated erosion;
  - c. No surface disturbance will occur within 100 m of a listed plant. If an area that is closer than 200 m from a listed plant must be disturbed (e.g., for mining, drilling, roads, pipelines), the edge of any area to be disturbed that is between 100 to 200 m of any listed plant should be temporarily fenced to keep disturbance from further approaching the listed plant's habitat. To avoid working in listed plant habitat and drawing attention to listed plants, the edge of disturbance should be fenced, not the nearby plant population. This measure could be modified with the approval of BLM and USFWS.
  - d. If a surface disturbance must be located less than 200 m from a listed plant, appropriate dust-abatement actions, commensurate with the level of use, must be taken in consultation with the USFWS and BLM.
3. If ground-disturbing activities occur within 200 m of listed plants, the plants should be monitored in accordance with the *Measuring and Monitoring of Plant Populations*, BLM Technical Reference 1730-1, 1998, during the blooming period for plant health, vigor, and the occurrence of transported dust from project activities. Data should also include a site description with GPS coordinates, size of the area occupied, estimated number and age range of plants, and evidence of habitat disturbance, plant damage, or mortality. Post-construction monitoring for invasive species must also be conducted. Annual reports should be provided to the BLM and the USFWS.
  4. "Translocation" (transplanting) shall not be used as a rationale to defend a "not likely to adversely affect" or a "no effect" determination for endangered or threatened species.
  5. Vehicle travel will avoid suitable and occupied habitat.
  6. In consultation with USFWS, evaluate projects that remove topsoil in areas of suitable habitat for listed species shall set aside and replace the topsoil when ground work is completed to preserve the seed bank and associated mycorrhizal species, and to discourage invasive species.
  7. When possible, revegetation should be limited to native species that will not compete with the rare species at that site. Revegetation projects should require a site-specific plan for areas with listed plant species, to be developed in consultation with the BLM and the USFWS.
  8. Protective stipulations for endangered or threatened species should include appropriate measures to protect pollinator species that have been identified.
  9. When listed plant species are near project areas, dust control measures should be employed to minimize fugitive dust deposition on plant surfaces.

10. When listed plants are near project areas, appropriate dust control measures will be determined in consultation with the BLM and the USFWS to minimize fugitive dust deposition on plant surfaces.
11. For riparian and wetland-associated species (e.g., Ute ladies'-tresses), ensure that water extraction or disposal practices do not result in a change of hydrologic regime outside of the range of natural variability.
12. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat. Overspray from evaporation ponds should be located such that it falls at least 200 m from listed plant locations, if these are necessary.

### **Species Determined Not To Be within the Action Area**

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

### **Candidate Animal Species Determined To Be within the Action Area**

**Yellow-Billed Cuckoo** (This species is within the action area only in Utah, and because it is a candidate species, it will not be addressed in the BA, but these conservation measures will be in the PEIS.)

1. Construction of roads, pipelines, and power lines in riparian habitat should not occur from June 1 through August 1.
2. Prohibit permanent surface-disturbing activities within 0.25 mi of any suitable yellow-billed cuckoo habitat. Exceptions should be evaluated on a case-by-case basis to avoid adverse impacts.
3. To avoid direct impacts or changes in riparian habitat, do not adversely modify stream channel morphology or annual streamflow regimes in suitable habitat.
4. Prohibit non-surface-disturbing activities within yellow-billed cuckoo habitat that will have adverse effects to the yellow-billed cuckoo or its habitat (e.g., boat and raft landings, outfitting camps, firewood collection) within 0.25 mi of occupied habitat.
5. Chemical insecticides shall not be applied within 0.25 mi of yellow-billed cuckoo occupied habitat.
6. Prohibit herbicide application for grasshopper control in yellow-billed cuckoo habitat within 0.25 mi of any active nests.
7. If technically feasible, biological control should be used in place of chemical pest control.

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