

APPENDIX Q.

FINALIZED CONSERVATION MEASURES AND BEST MANAGEMENT PRACTICES (BMPs) FOR T&E SPECIES OF UTAH FROM THE LAND USE PLAN PROGRAMMATIC BAS AND SECTION 7 CONSULTATIONS—2007

As part of the proposed action, the BLM has included conservation measures to minimize or eliminate adverse impacts to federally listed species. These measures are listed by species:

Q.1 BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Bald eagle (*Haliaeetus leucocephalus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the Service.

1. BLM will place restrictions on all authorized (i.e., permitted) activities that may adversely impact bald eagles, their breeding habitat, roosting sites, and known winter concentration areas, in order to avoid or minimize potential impacts.

Measures have been adapted from guidance published in the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (USFWS 2002), as well as coordination between BLM and the Service. Measures include, but may not be limited to seasonal/daily timing limitations, and/or spatial buffers as follows:

- Temporary activities¹ or habitat alterations that may disturb nesting bald eagles will be restricted from *January 1st*, to *August 31st* within 1.0 mile of Bald eagle nest sites. Exceptions may be granted where no nesting behavior is initiated prior to June 1st.
- Temporary activities or habitat alterations that may disturb bald eagles will be restricted within 0.5 mile of known winter concentration areas from *November 1st* to *March 31st*. Additionally, where daily activities must occur within these spatial buffers, and are approved through subsequent consultation, activities should be properly scheduled to occur after 9 a.m. and terminate at least one hour before official sunset to ensure that bald eagles using these roosts are allowed the opportunity to vacate their roost in the morning and return undisturbed in the evening.
- No permanent² infrastructure will be placed within 1.0 mile of bald eagle nest sites or within 0.5 mile of bald eagle winter concentration areas.
- Where activities are authorized within breeding habitats or known winter concentration areas, monitoring efforts would document what, if any, impacts occur during project

¹ Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

² Permanent activities continue for more than one breeding season and/or cause a loss of habitat or displace individuals through disturbance (e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line).

implementation, and to what extent the species was affected. The results of these monitoring efforts would be carried forward in the design and implementation of future projects as part of the adaptive management process.

2. For all project-related survey and monitoring actions:
 - Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts. Reports must follow field office guidance for BLM-specified formats for written and automated databases.
 - Any detection of bald eagle presence during survey or monitoring efforts must be reported to the authorized officer within 48 hours of detection.
3. Appropriately timed surveys in suitable bald eagle nesting habitat or identified concentration areas shall be conducted in accordance with approved protocols prior to any activities that may disturb bald eagles. Surveys would only be conducted by BLM-approved individuals or personnel.
4. BLM shall in coordination with cooperating agencies and/or partners (e.g., UDWR, Service, etc.), verify annual status (active vs. inactive) of all known bald eagle nests, and other identified concentration areas on BLM administered lands.
5. When project proposals that may affect threatened and endangered species are received, BLM will coordinate with the Service at the earliest possible date so that the Service can provide necessary information to minimize, or avoid, the need to redesign projects at a later date to include conservation measures that may be determined as appropriate by the Service.
6. BLM administered lands within 1.0 mile of bald eagle nests, or identified communal winter roosts, should not be exchanged or sold. If it is imperative that these lands be transferred out of BLM ownership, then every effort should be made to include conservation easements or voluntary conservation restrictions to protect the bald eagles and support their conservation.
7. Proponents of BLM authorized actions will be advised that roadside carrion can attract foraging bald eagles and potentially increase the risk of vehicle collisions with individuals feeding on carrion. When carrion occurs on the road, appropriate officials will be notified for necessary removal.
8. Power lines will be built to standards and guidelines identified by the Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005).
9. BLM will make educational information available to project proponents and the general public pertaining to the following topics:
 - appropriate vehicle speeds and the associated benefit of reduced vehicle collisions with wildlife;
 - use of lead shot (particularly over water bodies);
 - use of lead fishing weights; and
 - general ecological awareness of habitat disturbance.
10. Since bald eagles are often dependent on aquatic species as prey items, BLM will periodically review existing water quality records (e.g., UDEQ, UDWR, USGS) from monitoring stations on, or near, important bald eagle habitats (i.e., nests, roost, concentration areas) on BLM lands for any conditions that could adversely affect bald eagles or their prey. If water quality problems are identified, BLM will contact the appropriate jurisdictional entity to cooperatively monitor the condition and/or take corrective action.

Q.2 MEXICAN SPOTTED OWL (*STRIX OCCIDENTALIS LUCIDA*)

The following list of measures provides species-specific guidance, intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Mexican spotted owl (*Strix occidentalis lucida*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the Service.

1. BLM will place restrictions on all authorized (permitted) activities that may adversely affect the Mexican spotted owl in identified PACs, breeding habitat, or designated critical habitat, to reduce the potential for adverse impacts to the species. Restrictions and procedures have been adapted from guidance published in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS 2002b), as well as coordination between BLM and the Service. Measures include:
 - Surveys, according to USFWS protocol, will be required prior to any disturbance related activities that have been identified to have the potential to impact Mexican spotted owl, unless current species occupancy and distribution information is complete and available. All surveys must be conducted by USFWS certified individuals, and approved by the BLM authorized officer.
 - Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is temporary³ or permanent⁴:
 - For all temporary actions that may impact owls or suitable habitat:
 - If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
 - If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season.
 - Eliminate access routes created by a project through such means as raking out scars, revegetation, gating access points, etc.
 - For all permanent actions that may impact owls or suitable habitat:
 - Survey two consecutive years for owls according to established protocol prior to commencing of activity.
 - If owls are found, no actions will occur within 0.5 mile of identified nest site.
 - If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC).

³ Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

⁴ Permanent activities continue for more than one breeding season and/or cause a loss of owl habitat or displaces owls through disturbances, e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line.

- Avoid placing permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied.
 - Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims (Delaney et al. 1997). Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims.
 - Limit disturbances to and within suitable owl habitat by staying on designated routes.
 - Limit new access routes created by the project.
2. BLM will, as a condition of approval (COA) on any project proposed within identified PACs, designated critical habitat, or within spatial buffers for Mexican spotted owl nests (0.5 mile), ensure that project proponents are notified as to their responsibilities for rehabilitation of temporary access routes and other temporary surface disturbances, created by their project, according to individual BLM Field Office standards and procedures, or those determined in the project-specific Section 7 Consultation.
 3. BLM will require monitoring of activities in designated critical habitat, identified PACs, or breeding habitats, wherein it has been determined that there is a potential for take. If any adverse impacts are observed to occur in a manner, or to an extent that was not considered in the project-specific Section 7 Consultation, then consultation must be reinitiated.

Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization, or mitigation measures. Monitoring results would be considered an opportunity for adaptive management, and as such, would be carried forward in the design and implementation of future projects.

4. For all survey and monitoring actions:
 - Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts.
 - Report any detection of Mexican spotted owls during survey or monitoring to the authorized officer within 48 hours.
5. BLM will, in areas of designated critical habitat, ensure that any physical or biological factors (i.e., the primary constituent elements), as identified in determining and designating such habitat, remains intact during implementation of any BLM-authorized activity.
6. For all BLM actions that "*may adversely affect*" the primary constituent elements in any suitable Mexican spotted owl habitat, BLM will implement measures as appropriate to minimize habitat loss or fragmentation, including rehabilitation of access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
7. Where technically and economically feasible, use directional drilling from single drilling pads to reduce surface disturbance, and minimize or eliminate need to drilling in canyon habitats suitable for Mexican spotted owl nesting.
8. Prior to surface disturbing activities in Mexican spotted owl PACs, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion. These principles include:

- Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
 - Avoid surface disturbance in areas with high erosion hazards to the greatest extent possible. Avoid mid-slope locations, headwalls at the source of tributary drainages, inner valley gorges, and excessively wet slopes such as those near springs. In addition, avoid areas where large cuts and fills would be required.
 - Locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
9. Project developments should be designed, and located to avoid direct or indirect loss or modification of Mexican spotted owl nesting and/or identified roosting habitats.
10. Water production associated with BLM authorized actions should be managed to ensure maintenance or enhancement of riparian habitats.

Q.3 SOUTHWESTERN WILLOW FLYCATCHER (*EMPIDONAX TRAILLII EXTIMUS*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Southwestern willow flycatcher (*Empidonax traillii extimus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Surveys will be required prior to operations that "*may adversely affect*" the Southwestern willow flycatcher unless species occupancy data and distribution information is complete and available. Surveys will only be conducted by BLM-approved personnel. In the event species occurrence is verified, project proponents may be required to modify operational plans at the discretion of the authorized officer. Modifications may include appropriate measures for minimization of adverse effects to the Southwestern willow flycatcher and its habitat.
2. BLM will monitor and restrict, when and where necessary, authorized or casual use activities that "*may adversely affect*" the Southwestern willow flycatcher, including but not limited to, recreation, mining, and oil and gas activities. Monitoring results should be considered in the design and implementation of future projects.
3. To monitor the impacts of BLM-authorized projects determined "*likely to adversely affect*" the Southwestern willow flycatcher, BLM should prepare a short report describing progress, including success of implementation of all associated mitigation. Reports shall be submitted annually to the USFWS Utah Field Office by March 1st beginning one full year from date of implementation of the proposed action. The report shall list and describe the following items:
 - Any unforeseen adverse effects resulting from activities of each site-specific project (may also require reinitiation of formal Consultation);
 - When, and if, any level of anticipated incidental take is approached (as allowed by separate Incidental Take Statements of site-specific Formal Section 7 Consultation efforts);
 - When, or if, the level of anticipated take (as allowed by separate Incidental Take Statements from site-specific formal consultations) is exceeded; and
 - Results of annual, periodic monitoring which evaluate the effectiveness of the reasonable and prudent measures or terms and conditions of the site-specific Consultation.

4. BLM should avoid granting activity permits or authorizing development actions in Southwestern willow flycatcher habitat. Unoccupied potential habitat should be protected in order to preserve them for future management actions associated with the recovery of the Southwestern willow flycatcher.
5. BLM will ensure project design incorporates measures to avoid direct disturbance to populations and suitable habitats where possible. At a minimum, project designs should include consideration of water flows, slope, seasonal and spatial buffers, possible fencing, and pre-activity flagging of critical areas for avoidance.
6. The BLM will continue to address illegal and unauthorized OHV use and activity upon BLM administered lands. In order to protect, conserve, and recover the Southwestern willow flycatcher in areas of heavy unauthorized use, temporary closures, or use restrictions beyond those which are already in place, may be imposed. As funding allows, BLM should complete a comprehensive assessment of all OHV use areas that interface with Southwestern willow flycatcher populations. Comparison of Southwestern willow flycatcher populations and OHV use areas using GIS would give BLM personnel another tool to manage and/or minimize impacts.
7. All surface disturbing activities should be restricted within a 0.25 mile buffer from suitable riparian habitats and permanent surface disturbances should be avoided within 0.5 mile of suitable Southwestern willow flycatcher habitat.

Unavoidable ground disturbing activities in occupied Southwestern willow flycatcher habitat should only be conducted when preceded by current year survey, should only occur between August 16 and April 30 (the period when Southwestern willow flycatcher are not likely to be breeding), and should be monitored to ensure that adverse impacts to Southwestern willow flycatcher are minimized or avoided, and to document the success of project specific mitigation/protection measures. As monitoring is relatively undefined, project specific requirements must be identified.

8. BLM will properly consider nesting periods for Southwestern willow flycatcher when conducting horse gathering operations in the vicinity of habitat.
9. BLM will ensure that plans for water extraction and disposal are designed to avoid changes in the hydrologic regime that would likely result in loss or undue degradation of riparian habitat.
10. Native species will be preferred over non-native for revegetation of habitat in disturbed areas.
11. BLM will coordinate with other agencies and private landowners to identify voluntary opportunities to modify current land stewardship practices that may impact the Southwestern willow flycatcher and its habitats.
12. Limit disturbances to within suitable habitat by staying on designated routes.
13. Ground-disturbing activities will require monitoring throughout the duration of the project to ensure that adverse impacts to Southwestern willow flycatcher are avoided. Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization or mitigation measures. Monitoring results would be considered an opportunity for adaptive management and, as such, would be carried forward in the design and implementation of future projects.

14. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in Southwestern willow flycatcher habitat.
15. Habitat disturbances (i.e., organized recreational activities requiring special use permits, drilling activities, etc.) will be avoided within 0.25 mile of suitable Southwestern willow flycatcher habitat from May 1 to August 15.
16. Grazing allotments that contain habitat for the species will be managed with consideration for recommendations provided by the Southwestern Willow Flycatcher Recovery Plan, and other applicable research.

Q.4 COLORADO RIVER ENDANGERED FISHES

Bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), and Razorback sucker (*Xyrauchen texanus*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Colorado pikeminnow, Humpback chub, bonytail, and razorback sucker, herein referred to as the Colorado River fishes. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Monitoring of impacts of site-specific projects authorized by the BLM will result in the preparation of a report describing the progress of each site-specific project, including implementation of any associated reasonable and prudent measures or reasonable and prudent alternatives. This will be a requirement of project proponents and will be included as a condition of approval (COA) on future proposed actions that have been determined to have the potential for take. Reports will be submitted annually to the USFWS - Utah Field Office, beginning after the first full year of implementation of the project, and shall list and describe:
 - Any unforeseen direct or indirect adverse impacts that result from activities of each site-specific project;
 - Estimated levels of impact or water depletion, in relation to those described in the original project-level Consultation effort, in order to inform the Service of any intentions to reinstate Section 7 Consultation; and
 - Results of annual, periodic monitoring which evaluates the effectiveness of any site-specific terms and conditions that are part of the formal Consultation process. This will include items such as an assessment of whether implementation of each site-specific project is consistent with that described in the BA, and whether the project has complied with terms and conditions.
2. The BLM shall notify the USFWS immediately of any unforeseen impacts detected during project implementation. Any implementation action that may be contributing to the introduction of toxic materials or other causes of fish mortality must be immediately stopped until the situation is remedied. If investigative monitoring efforts demonstrate that the source of fish mortality is not related to the authorized activity, the action may proceed only after notification of USFWS authorities.

3. Unoccupied, suitable habitat areas should be protected in order to preserve them for future management actions associated with the recovery of the Endangered Colorado River Fish, as well as approved reintroduction, or relocation efforts.
 - BLM will avoid impacts where feasible, to habitats considered most representative of prime suitable habitat for these species.
 - Surface disturbing activities will be restricted within ¼ mile of the channel centerline of the Colorado, Green, Duchesne, Price, White, and San Rafael Rivers
 - Surface disturbing activities proposed to occur within floodplains or riparian areas will be avoided unless there is no practical alternative or the development would enhance riparian/aquatic values. If activities must occur in these areas, construction will be designed to include mitigation efforts to maintain, restore, and/or improve riparian and aquatic conditions. If conditions could not be maintained, offsite mitigation strategies should be considered.
4. BLM will ensure project proponents are aware that designs must avoid as much direct disturbance to current populations and known habitats as is feasible. Designs should include:
 - protections against toxic spills into rivers and floodplains;
 - plans for sedimentation reduction;
 - minimization of riparian vegetation loss or degradation;
 - pre-activity flagging of critical areas for avoidance;
 - design of stream-crossings for adequate passage of fish; and
 - measures to avoid or minimize impacts on water quality at the 25-year frequency runoff
5. Prior to surface disturbing activities, specific principles will be considered to control erosion. These principles include:
 - Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
 - Avoid, where possible, surface disturbance in areas with high erosion hazards.
 - Avoid mid-slope location of drill pads, headwalls at the source of tributary drainages, inner valley gorges, excessively wet slopes such as those near springs and avoid areas where large cuts and fills would be required.
 - Design and locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
6. Where technically and economically feasible, project proponents will use directional drilling or multiple wells from a single pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such drilling does not intercept or degrade alluvial aquifers. Drilling will not occur within 100 year floodplains that contain listed fish species or their designated critical habitats.
7. The Utah Oil and Gas Pipeline Crossing Guidance (BLM National Science and Technology Center), or other applicable guidance, will be implemented for oil and gas pipeline river/stream crossings.
8. In areas adjacent to 100-year floodplains, particularly in systems prone to flash floods, BLM will analyze the risk for flash floods to impact facilities. Potential techniques may include the use of closed loop drilling and pipeline burial or suspension as necessary to minimize the potential for equipment damage and resultant leaks or spills.

9. Water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect and adversely modify the critical habitat of these endangered fish species. Section 7 consultation will be completed with the Service prior to any such water depletions.
10. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, a 25-year frequency run-off.

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