

# APPENDIX D

BEST MANAGEMENT PRACTICES

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### 1 INTRODUCTION

Best management practices (BMPs) are those land and resource management techniques designed to maximize beneficial results and minimize negative impacts of management actions. BMPs are defined as methods, measures, or practices selected on the basis of site-specific conditions to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts. Interdisciplinary site-specific analysis is necessary to determine which management practices would be necessary to meet specific goals. Selection and implementation of any BMPs will be evaluated against the New Mexico Public Land Health Standards to ensure progress toward public land health attainment. BMPs include, but are not limited to, structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, and after pollution-producing or surface-disturbing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 Code of Federal Regulation 130.2(m), Environmental Protection Agency Water Quality Standards Regulation) or to prevent unnecessary or undue degradation of resources.

BMPs are identified as part of the National Environmental Policy Act process, with interdisciplinary involvement. Because the control of nonpoint sources of pollution and prevention of damage to other resources is an ongoing process, continual refinement of BMP design is necessary. This process can be described in five steps, which are: (1) selection of design of a specific BMP; (2) application of BMP; (3) monitoring; (4) evaluation; and (5) feedback. Data gathered through monitoring is evaluated and used to identify changes needed in BMP design, application, or in the monitoring program.

BMPs described in this appendix are a compilation of existing policies and guidelines and commonly employed practices designed to assist in achieving the objectives for maintaining or minimizing water quality degradation from nonpoint sources; preventing the loss of soil productivity; providing guidelines for aesthetic conditions within watersheds; and mitigating impacts to soil, vegetation, or wildlife habitat from surface-disturbing activities. BMPs are selected and implemented as necessary, based on site-specific conditions, to meet a variety of resource objectives for specific management actions. Therefore, this document does not provide an exhaustive list of BMPs, as additional BMPs or modifications may be identified to minimize the potential for negative impacts when evaluating site-specific management actions through an interdisciplinary process.

In addition, implementation and effectiveness of BMPs need to be monitored to determine whether the practices are achieving resource objectives and accomplishing desired goals. Adjustments will be made as necessary.

Each of the following BMPs are a part of the coordinated development of the *TriCounty Resource Management Plans* and may be updated as new information becomes available to ensure objectives are met and to conform to changes in Bureau of Land Management (BLM) regulations, policy, direction, or new scientific information. Applicants also may suggest alternative procedures that could accomplish the same result. These guidelines will apply, where appropriate, to all use authorizations, including BLM-initiated projects. Any BMP listed may be used in any program wherever it may be effective.

## **2 BEST MANAGEMENT PRACTICES**

### **2.1 Road Design and Maintenance**

- A. Design roads to minimize total disturbance, to conform to topography, and to minimize disruption of natural drainage patterns.
- B. Base road design criteria and standards on road management objectives such as traffic requirements of the proposed activity, overall transportation objectives, and to meet environmental objectives such as minimizing damage to natural surroundings.
- C. Locate roads on stable terrain such as ridgetops, natural benches, the flatter transitional slopes near ridges and valley bottoms, and moderate sideslopes. Locate roads away from slumps, slide-prone areas, concave slopes, clay beds, and places where rock layers dip parallel to the slope. Locate roads on well-drained soil types; avoid wet areas.
- D. Construct cut-and-fill slopes to be approximately 3(h):1(v) or flatter where feasible. Locate roads to minimize heights of cut banks. Avoid high, steeply sloping cut banks in highly fractured bedrock.
- E. Avoid head walls; midslope locations on steep, unstable slopes; fragile soils; seeps; old landslides; sideslopes in excess of 70 percent; and areas where the geologic bedding planes or weathering surfaces are inclined with the slope. Implement extra mitigation measures when these areas cannot be avoided.
- F. Construct roads for surface drainage by using outslopes, crowns, grade changes, drain dips, waterbars, and/or insloping to ditches as appropriate.
- G. Sloping the road base to the outside edge for surface drainage is normally recommended for local spurs or minor collector roads where traffic volume is low and low traffic speeds are

anticipated. This is also recommended in situations where long intervals between maintenance will occur and where minimum excavation is wanted. Outsloping is not recommended on steep slopes. Sloping the road base to the inside edge is an acceptable practice on roads with steep sideslopes and where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.

- H. Crowning and ditching are recommended for arterial and collector roads where traffic volume, speed, intensity, and user comfort are considerations. Recommended gradients range from 0 to 15 percent where crowning and ditching may be applied, as long as adequate drainage away from the road surface and ditch lines is maintained.
- I. Where possible, reroute or reengineer vehicle routes that divert overland flow and contribute to declines in public land health (watershed and vegetation standards).
- J. Minimize excavation when constructing roads through balancing earthwork, narrowing road widths, and end-hauling where sideslopes are between 50 and 70 percent.
- K. If possible, construct roads when soils are dry and not frozen. When soils or road surfaces become saturated to a depth of 3 inches, BLM-authorized activities should be limited or cease unless otherwise approved by the Authorized Officer.
- L. Consider improving inadequately surfaced roads that are to be left open to public traffic during wet weather by using gravel or pavement to minimize sediment production and maximize safety.
- M. Retain vegetation on cut-slopes unless it poses a safety hazard or restricts maintenance activities. Roadside brushing of vegetation should be done in a way that prevents disturbance to root systems and visual intrusions (i.e., avoid using excavators for brushing).
- N. Retain adequate vegetation between roads and streams to filter runoff caused by roads.
- O. Avoid riparian/wetland areas where feasible; locate in these areas only if the roads do not interfere with the attainment of proper functioning condition and riparian management objectives.
- P. Minimize the number of unimproved stream crossings. When a culvert or bridge is not feasible, locate drive-through (low-water crossings) on stable rock in the drainage channel. Harden crossings with rock and gravel if necessary. Use angular rock if available.
- Q. Locate roads and limit activities of mechanized equipment within stream channels to minimize their influence on riparian areas. When stream crossing is necessary, design the approach and crossing perpendicular to the channel, where practical. Locate the crossing where the channel is well defined, unobstructed, and straight.
- R. Avoid placing fill material in a floodplain unless the material is heavy enough to remain in place during flood events.
- S. Use drainage dips instead of culverts on roads where gradients would not present a safety issue. Locate drainage dips in such a way that water will not accumulate or where outside berms will prevent drainage from the roadway. Locate and design drainage dips immediately upgrate of stream crossings and provide buffer areas and catchment basins to prevent sediment from entering the stream.
- T. Construct catchment basins, brush windrows, and culverts so as to minimize sediment transport from road surfaces to stream channels. Install culverts in natural drainage channels in a way

that conforms with the natural streambed gradients so the drainage flows to outlets that discharge onto rocky or hardened, protected areas.

- U. Design and locate water-crossing structures in natural drainage channels to offer adequate passage for fish, provide for minimum impacts to water quality, and be capable of handling a 100-year event for runoff and floodwaters.
- V. Use culverts that will withstand, at a minimum, a 50-year storm event and/or that have a minimum diameter of 24 inches for permanent stream crossings and a minimum diameter of 18 inches for drains that cross roads.
- W. Replace undersized culverts and repair or replace damaged culverts and downspouts. Provide energy dissipaters at culvert outlets or drainage dips.
- X. Locate culverts or drainage dips to avoid discharging onto unstable terrain such as head walls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or road surfaces. Place culverts on solid ground to avoid road failures.
- Y. Use properly sized aggregate and riprap during culvert construction. Place riprap at culvert entrance to streamline water flow and reduce erosion.
- Z. Establish adapted vegetation on all cut-and-fill slopes immediately following road construction and maintenance.
- AA. Remove berms from the downslope side of roads, consistent with safety considerations.
- BB. Leave abandoned roads in a condition that provides adequate drainage without further maintenance. Close abandoned roads to traffic. Physically obstruct the road with gates, large berms, trenches, logs, stumps, or boulders as necessary to accomplish permanent closure.
- CC. Abandon and rehabilitate roads no longer needed. Leave these roads in a condition that provides adequate drainage and remove culverts.
- DD. When plowing snow for road use during winter, provide breaks in snow berms to allow for road drainage. Avoid plowing snow into streams. Plow snow only on existing roads.
- EE. Perform maintenance to conserve existing surface material; retain the original crowned or outsloped, self-draining cross-section; and prevent or remove rutted berms (except those designed for slope protection) and other irregularities that retard normal surface runoff. Avoid casting loose ditch or surface material past the shoulder where it can cause stream sedimentation or weaken slump-prone areas. Avoid undercutting backslopes.
- FF. Do not disturb the toe of cutslopes while pulling ditches or grading roads. Avoid side casting road material into streams.
- GG. Grade roads only as necessary. Maintain drain dips, waterbars, road crown, insloping, and outsloping, as appropriate, during road maintenance.
- HH. Maintain roads in special management areas according to special management area guidance. Generally, retain roads within existing disturbed areas and side cast material away from the special management area.
- II. When landslides occur, save all soil and material usable for reclamation and stockpile it for future reclamation needs. Avoid side casting slide material where it can damage, overload, or saturate embankments or flow into downslope drainage courses. Reestablish vegetation as needed in areas where it has been destroyed due to side casting.

- JJ. Strip and stockpile topsoil before construction of new roads, if feasible. Reapply soil to cut-and-fill slopes prior to revegetation.

## **2.2 Surface-Disturbing Activities**

- A. Require special design and reclamation measures, as appropriate, to protect scenic and natural landscape values. This may include transplanting trees and shrubs, mulching and fertilizing disturbed areas, removing surfacing material, imprinting, irrigating, using low-profile permanent facilities, and painting to minimize visual contrasts. Surface-disturbing activities may be moved to avoid sensitive areas or to reduce the visual effects of the proposal.
- B. Design aboveground facilities that requiring painting to blend in with the surrounding environment.
- C. Restrict surface disturbances in areas that have special topographic (steep or broken terrain and/or benches) and soil concerns in order to reduce impacts caused by soil erosion and habitat disturbance. Development in these areas will be considered on a case-by-case basis and will contain site-specific mitigation designed to prevent increased sediment from being transported into drainages and to prevent fragmentation of areas determined to provide important wildlife habitat.
- D. Minimize the off-road impact of large vehicles in areas that allow for off-road travel. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- E. Excavate topsoil and subsoil only where it is absolutely necessary. Consider brush-beating, mowing, and/or parking on vegetation for surface disturbing activities.
- F. Contour disturbed areas to blend with the natural topography. Blending is defined as reducing form, line, and color contrast associated with surface disturbance. Disturbances should be contoured to match the original topography, where matching is defined as reproducing the original topography and eliminating the form, line, and color caused by the disturbance as much as possible.
- G. Implement interim reclamation concurrent with construction and site operations to the extent possible. Initiate final reclamation actions within six months of the termination of operations unless otherwise approved in writing by the Authorized Officer.
- H. Push the fill material into cut areas and over backslopes. Do not leave depressions that could trap water or form ponds unless the authorized officer has determined that dips or depressions may be used to assist reclamation and seed propagation efforts.
- I. Make certain that reclaimed soil is free of contaminants and has adequate depth, texture, and structure for successful reclamation of vegetation. Vegetation reclamation will be considered successful when healthy, mature perennials are established with a composition and density that closely approximates the surrounding vegetation, as prescribed by the BLM, and the reclamation area is free of noxious weeds.
- J. Construct a BLM-standard barbed-wire fence if necessary to exclude livestock for a minimum of at least two successful growing seasons after reclamation.
- K. Include a restoration plan for habitat of special status species when the BLM determines it is appropriate. Develop the restoration plan, in consultation with BLM, for BLM approval.

- L. Require additional reclamation measures, if needed, based on the conditions existing at the time of abandonment.
- M. Carefully handle and dispose of oil and fuel from equipment and vehicles to prevent contamination of soil or water.
- N. Develop a spill contingency plan that identifies all actions to be taken in the event of a chemical spill, including phone numbers for Federal, State, and local agencies that must be notified.
- O. Time activities to avoid wet periods or unpleasant weather condition.

### **2.3 Oil and Gas Activities**

- A. Consider creating field development plans to minimize unnecessary disturbance. (Such plans are encouraged.) Address sensitive area avoidance or mitigation; potential road, utility, and well locations; road classes; and plans for interim and final reclamation in any field development plans.
- B. Consider dual completing, recompleting, or commingling (both downhole and at the surface) the drilling of multiple wells from a single location and centralizing tank batteries to reduce the number of new well pads and consequent surface disturbance. These actions will reduce impacts to soil and vegetation, reduce air impacts caused by dust, reduce habitat fragmentation, and offer less opportunity for the spread of noxious weeds. Such actions are encouraged.
- C. Consider unitizing in areas of dense development to increase management efficiency and facilitate operations in sensitive areas. Unitization is the process by which multiple lease holders in a geographic area share facilities so as to reduce surface disturbance caused by duplicate facilities such as pipelines and compressor stations. Unitization by operators is encouraged.
- D. Reduce the size of the well pad whenever possible without compromising safety.
- E. Perform remote monitoring of wells and related production equipment to reduce wildlife disturbance and road deterioration. This action is encouraged.
- F. Design pipelines associated with oil and gas activities to follow existing roads and rights-of-way corridors, where possible, to minimize surface disturbance.
- G. Bury pipelines associated with oil and gas exploration, development, production, and transportation when possible. (Pipeline burial is preferred.) Pipelines greater than 4 inches in nominal diameter, all injection lines, and gas lines with a pressure greater than 125 pounds per square inch must be buried and constructed of steel. The use of plastic pipe will be approved by the Authorized Officer on a case-by-case basis. A waiver of the requirement to bury pipelines will be considered in the following situations:
  - 1) When surface installation of plastic pipelines will be temporary (one year or less), taking into consideration the length of the pipeline, its proposed location, the potential hazards present, the characteristics of the pipe regarding deterioration, the American Society for Testing and Materials or similar specifications for the pipe, the intended use of the pipeline, and other appropriate factors.
  - 2) Where rock outcrops at the surface make the burial of pipeline impractical, such as when unreasonable and unreclaimable surface disturbance would result. Where the pipeline is

exposed, painting may be required in accordance with the painting policy for visual resource management areas and Notice to Lessees 87-1, New Mexico. Waiver of the requirement for painting will be considered on a case-by-case basis.

- 3) Where the surface ownership along the pipeline route is mixed, and the majority of surface ownership is not public. In those cases, the installation of pipelines on public land will conform to the practice to be employed on the remainder of the pipeline, unless special resource management concerns dictate strict adherence to this policy.
- H. Minimize noise in sensitive wildlife habitats. Consider using noise reduction mufflers, earthen berms, walls, sheds, and/or distance to reduce sound levels.
  - I. Cover and fence all production-related pits and tanks, regardless of size, to exclude wildlife. Fencing shall be in accordance with BLM specifications. Netting shall be placed over all open production pits to eliminate any hazard to migratory birds or other wildlife. Netting is also required over reserve pits which have been identified as containing oil or hazardous substances (CERCLA Section 101(14)) as determined by visual observation or testing. The mesh diameter shall be no larger than one inch. Cover vent pipes to prevent bats or small birds from being trapped.

### **2.3.1 Preliminary Evaluations**

- A. Activities occurring during preliminary evaluations may include remote sensing; mapping of rock outcrops and seeps (either of which result in little or no surface disturbance); and seismic, gravity, and magnetic surveys.
- B. A lease is not required to conduct such preliminary evaluations. However, the geophysical operator is required to file a completed Form 3150-4, "Notice of Intent to Conduct Oil and Gas Exploration Operations," for all operations on public lands.
- C. In general, the BLM requires an examination of resource values and development of appropriate surface protection and reclamation measures before the geophysical contractor begins surface-disturbing activities associated with preliminary evaluations. BLM will solicit involvement from public land users (e.g., grazing allottees) to develop site-specific protection measures and reclamation specifications. Compliance monitoring should occur during and after seismic exploration activities when or if necessary. Compliance inspections during the operation would ensure that requirements and guidelines are being followed. Compliance inspections upon completion of work would ensure that the lines are clean and drill holes are plugged properly.
- D. The frequency of authorized seismic exploration will be dependent upon resource conditions and seasonal restrictions (timing limitations) that may be imposed to reduce conflicts with watershed conditions, wildlife, and hunting. Management practices specific to wildlife and vegetation resources include the following:
  - 1) Prior to surveying/flagging routes for geophysical surveys or other preliminary activities, the project area shall be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. The Universal Transmercator grid locations of all raptor nests will be reported to the Authorized Officer. All raptor nests will be avoided by the required distances described under the Wildlife and Riparian Habitat section (See pages A-14 to A-15). A "raptor nest" is defined as any raptor or corvid nest.

- 2) In areas that constitute occupied or potential aplomado falcon habitat, a protocol survey for this species will be conducted along with the general raptor nest survey described above, prior to surveying/flagging lines.
- 3) During operations at any time, large trees or shrubs (greater than 6 feet in height) containing or capable of containing a raptor nest will be avoided by vehicular traffic or other activities likely to destroy them.
- 4) In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- 5) Occupied habitat for special status species will be avoided in a manner similar to surface use requirements (avoid occupied habitat up to 0.5 mile) unless impacts are mitigated adequately.

## **2.4 Renewable Energy**

All renewable wind energy projects will be subject to the policies and BMPs identified in the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* (BLM 2005c). BMPs are identified in Section 2.2.3.2 of that document, which can be viewed online at <http://www.windeis.anl.gov/>.

## **2.5 Rights-of-Way and Utility Corridors**

- A. Use areas adjoining or adjacent to previously disturbed areas for rights-of-way and utility corridors whenever possible rather than traverse undisturbed vegetation communities.
- B. Construct water bars or dikes on all rights-of-way and utility corridors and across the full width of the disturbed area, as directed by the Authorized Officer.
- C. Stabilize disturbed areas within road rights-of-way and utility corridors by implementing vegetation practices designed to hold soil in place and minimize erosion.
- D. Construct sediment barriers when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Employ straining or filtration mechanisms as needed for the removal of sediment from runoff.

## **2.6 Fire Suppression**

- A. Minimize surface disturbances and avoid the use of heavy earth-moving equipment where possible, on all fire suppression and rehabilitation activities, including mop-up, except where high value resources (including lives and property), are being protected.
- B. Install water bars and seed all constructed fire lines with native or adapted nonnative species as appropriate and in accordance with the BLM's *Emergency Fire Rehabilitation Handbook* (BLM 1999).
- C. Avoid dropping fire retardant that is detrimental to aquatic communities on streams, lakes, ponds and in riparian/wetland areas.
- D. Locate and construct hand lines to result in minimal surface disturbance while effectively controlling the fire. Hand crews should locate lines to take full advantage of existing land

features that represent natural fire barriers. Whenever possible, hand lines should follow the contour of the slope to protect the soil, provide sufficient residual vegetation to capture and retain sediment, and maintain site productivity.

- E. Suppress fire in riparian areas by using hand crews whenever possible.

## **2.7 Prescribed Burning**

- A. Protect soil productivity by using a low-intensity burn, if possible, to accomplish stated objectives. Burn only when the organic surface or duff layer has adequate moisture to minimize effects on the physical and chemical properties of the soil. When possible, maximize the retention of the organic surface or duff layer.
- B. Do not pile or burn slash within riparian/wetland areas. If riparian/wetland areas are within or adjacent to the prescribed burn unit, piles should be fire lined or scattered prior to burning.
- C. Avoid piling concentrations of large logs and stumps when preparing the unit for burning; pile small material (3 to 8 inches in diameter) instead. Burn slash piles when soil and duff moisture are adequate to reduce potential damage to soil resources.
- D. All fire management activities will be subject to the BMPs identified in the *Decision Record and Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas* (BLM 2004c) and the *New Mexico Wildland Fire Management Joint Powers Master Agreement*. BMPs are identified in these documents, which can be viewed online at <http://www.nm.blm.gov>.

## **2.8 Livestock Grazing Management**

- A. All rangeland projects and vegetation land treatments will meet current BLM policy and objectives of the *TriCounty Resource Management Plans*. This includes the BMPs for Surface Disturbing Activities and Invasive/Noxious Weed Management. Other BMPs may be required depending on the rangeland improvement project.
- B. Rangeland improvements projects and vegetation treatments are constructed as a portion of adaptive management to reduce resource conflicts and to achieve multiple-use objectives. They have been standardized over time to mitigate impacts and will be adhered to in the construction and maintenance of rangeland projects within the Planning Area. Rangeland improvements are structures, facilities, and practices intended to improve or facilitate grazing management and improve resources.
- C. Grazing management practices are developed through consultation on allotment-specific objectives and progress toward multiple-use objectives and sustainability of resources. Grazing management practices may include herding, grazing, and deferment periods; use of supplements; change of class of livestock; and increase or decrease of livestock numbers.

## **2.9 Mining**

- A. Reclaim all disturbed surface areas promptly, performing concurrent reclamation as necessary, and minimize the total amount of all surface disturbance.
- B. Strip all surface soil prior to conducting operations and stockpile and reapply it during reclamation, regardless of soil quality. Minimize the length of time soil remains in stockpiles

and the depth or thickness of stockpiles. When slopes on topsoil stockpiles exceed 5 percent, a berm or trench should be constructed below the stockpile to prevent sediment transport offsite.

- C. Strip and separate soil surface horizons where feasible and reapply in proper sequence during reclamation.
- D. Locate soil stockpiles and waste-rock disposal areas away from surface water to minimize off-site drainage effects.
- E. Establish vegetation cover on soil stockpiles that are to be in place longer than one year.
- F. Construct and rehabilitate temporary roads to minimize total surface disturbance, consistent with intended use.
- G. Consider temporary measures such as silt fences, straw bales, or mulching to trap sediment in sensitive areas until reclaimed areas are stabilized with vegetation.
- H. Reshape to the approximate original contour all areas to be permanently reclaimed, providing for proper surface drainage.
- I. Leave reclaimed surfaces in a roughened condition following soil application.
- J. Reclamation should be based on types of seed used and predicted weather patterns. Warm-season species seedings are best completed during June. Cool season species should be planted in the fall.

## **2.10 Invasive/Noxious Weed Management**

- A. Inspect and clean all surface-disturbing equipment prior to its coming onto public lands. This is especially important on vehicles from out of state or coming from a weed-infested area.
- B. Make sure the source of fill dirt or gravel brought onto public land is free of noxious weeds.
- C. Monitor construction sites for the life of the project for the presence of invasive/noxious weeds (including maintenance and construction activities). If weeds are found, the BLM Socorro Field Office will be notified and will determine the best method for the control of the particular weed species.
- D. Certify all seed as noxious-weed free. Areas will be monitored to determine the success of revegetation and the presence of invasive/noxious weeds and will be reseeded if necessary.
- E. Consider livestock quarantine, removal, or timing limitations in areas infested with invasive/noxious weeds.
- F. Certify all seed, hay, straw, mulch, or other vegetation material transported and used on public land for site stability, rehabilitation, or project facilitation as free of all reproductive parts of noxious weeds upon the passage of a weed-free law by the State of New Mexico. All baled feed, pelletized feed, and grain used to feed livestock also shall be certified as free of the seeds of noxious weeds.
- G. Consider having all vehicles that travel in or out of weed-infested areas clean their equipment before and after use on public land, including off-road and all-terrain vehicles. (This precaution is recommended.)

## **2.11 Developed Recreation**

- A. Construct recreation sites and provide appropriate sanitation facilities to minimize impacts on resource values and on public health and safety and to minimize user conflicts concerning approved activities and access within an area, as appropriate.
- B. Minimize impacts on resource values or enhance the recreational setting and recreation experience. Harden sites and locations subject to prolonged/repetitive, concentrated recreational uses with selective placement of gravel or other porous materials and allow for dust abatement, paving, and engineered road construction.
- C. Use public education and/or physical barriers (such as rocks, posts, vegetation) to direct or preclude uses and to minimize impacts on resource values and the quality of recreation experience.
- D. Limit specific activities, as appropriate, to avoid or correct adverse impacts on resource values and public safety and/or preclude conflicts between recreational uses.
- E. Employ land use ethics programs and techniques such as “Leave No Trace” and “Tread Lightly” programs. Use outreach efforts of such programs to lessen needs to implement more stringent regulatory measures to obtain resource protection and a quality recreation experience.

## **2.12 Wildlife and Riparian Habitat**

- A. Before a surface-disturbing activity begins, the project area will be surveyed for raptor nests or active prairie dog towns. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests and active prairie dog towns will be avoided by the following distances and seasonal periods:
  - 1) Eagle – 0.5 mile, February 1-July 15
  - 2) Prairie falcon – 0.5 mile, March 1-August 1
  - 3) Ferruginous hawk – 0.5 mile, February 1-July 15
  - 4) Aplomado falcon – 0.5 mile, January 1-July 31
  - 5) Gunnison prairie dog – 0.25 mile, February 15-June 15
  - 6) Black-tailed prairie dog – 0.25 mile, January 1-June 15
  - 7) All other raptor species – 0.25 mile, during observed nest establishment through fledging
- B. Require site specific mitigation to avoid disturbance within a half mile of occupied special status species habitat.
- C. Make all livestock waters on public land available to wildlife yearlong, so long as this meets grazing rotation objectives and there is no danger of damage to facilities from freezing.
- D. Situations where the rotation of livestock is achieved through turning off of water sources, a fence will be constructed around the watering facility to allow for opening/closing of a gate to facilitate movement of livestock. This will allow wildlife yearlong access to the watering facility. If freezing of the pipeline/trough system is a concern, fill up trough once a month during winter period to allow wildlife continued access to a water source. All watering facilities on public land will be fitted with an escape ramp to keep small mammals and birds from becoming trapped.

- E. Avoid constructing new roads within critical wildlife habitats. Permanent or seasonal closures may be instituted where problems exist or are expected. Where major road projects are proposed in wildlife corridors, use fencing and wildlife passes to mitigate wildlife impacts.
- F. Manage wildlife habitat on lands identified for disposal as a low priority, unless site specific analysis determines that changes in the existing situation have resulted in higher resource values warranting retention of these lands to protect fish and wildlife habitat values consistent with existing laws, regulations, and policies. Conduct a site specific assessment of environmental impacts before disposal of any public land.
- G. Manage upland habitats, including grasslands, shrub steppe, forest, and woodlands, so that the forage, water, cover, structure, and security necessary for wildlife are available on public land. Manage vegetative communities for the desired plant community based on the ecological site potential.
- H. Manage livestock to maintain forage that would support wildlife population levels identified by the New Mexico Department of Game and Fish (NMDGF).
- I. Construct protective exclosures/fences around riparian areas, wildlife watering facilities, and other areas of resource concern.
- J. Long-term land use activities will not be allowed within the species-specific buffer zones surrounding the active raptor nests or occupied prairie dog towns of the identified species. Short-term activities will be avoided within the species-specific buffer zones during the listed dates. Short-term activities will be limited to the buffer zone outside the boundary of an occupied prairie dog town and will not occur within the occupied town. All raptor nests, including those of nonlisted species, will be avoided within the buffer zone during the specified periods only, regardless of the duration of the activity. Before land use activities can commence, a raptor and prairie dog survey must be completed.
- K. A short-term activity is defined as an activity that would begin outside a given breeding season and end prior to initiation of a given breeding season. A long-term activity is defined as an activity that would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last seven years. A nest will be determined active or inactive by the Authorized Officer. Surveys will be conducted by professional biologists approved by the Authorized Officer.
- L. Ensure that all fences are constructed to BLM fence specifications to mitigate impacts on wildlife.
- M. Ensure that wildlife escape ramps are installed and maintained on all applicable water development projects on public lands (see the BLM *Water Developments Handbook* dated November 6, 1990 and IM #2004-156).
- N. Construct all new water improvements so they are located a minimum of 30 meters away from fences or other structures likely to pose a collision threat to bats.
- O. Do not allow surface disturbance within 0.5 mile of the outer edge of 100-year floodplains, playas, all artificial water developments (tanks, guzzlers, etc.), and riparian habitats (seeps, arroyos, etc.). Exceptions to this requirement will be considered on a case-by case basis.
- P. Avoided adverse impacts on the landscape by minimizing or excluding certain surface-disturbing activities that may degrade the objectives or intent of the project in areas where habitat and/or rangeland enhancement projects have been implemented, with the exception of

large landscape projects (prescribed burns, chemical treatments, and mechanical treatments). Exceptions to this requirement will be considered on a case-by-case basis.

- Q. Achieve habitat enhancement by limiting and/or mitigating existing and proposed commodity uses and by proactive habitat management practices including, but not limited to, fire management; water development; chemical, mechanical, or biological brush control; and fence modifications.
- R. Avoid all surface-disturbing activities, permanent or temporary, during the appropriate time periods in crucial calving, lambing, kidding, and fawning areas and wintering ranges.
- S. Survey the area for the presence of raptor nests prior to initiating geophysical or other preliminary surveys during the raptor breeding season.
- T. Follow these measures when siting facilities:
  - 1) In areas that constitute occupied or potential aplomado falcon habitat, a protocol survey for this species will be conducted along with the above general raptor nest survey prior to surveying/flagging locations.
  - 2) During operations at any time, all habitat features (pinnacles, cliffs, ledges, caves, and trees and shrubs greater than 6 feet high) containing or capable of containing raptor nests or bat habitat will be avoided by vehicular traffic or other surface-disturbing activities likely to remove or destroy them, unless approved by the BLM Authorized Officer.
  - 3) Tree and vegetation clearing will be limited to the minimum area required.
  - 4) Construction activities will be timed to avoid wet periods.
  - 5) Power lines will be constructed to standards outlined in the most recent version of *Suggested Practices for Raptor Protection on Power Lines* published by the Edison Electric Institute/Raptor Research Foundation, unless otherwise agreed to by the Authorized Officer. The holder is responsible for demonstrating that power pole designs not meeting these standards are raptor safe. Such proof will be provided by a raptor expert approved by the Authorized Officer. BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. The modifications and/or additions will be made by the holder without liability or expense to the United States.
  - 6) All equipment installed on Federal lands will be constructed to prevent birds and bats from entering them and, to the extent practical, to discourage perching and nesting.
  - 7) Open-top tanks, reserve pits, disposal pits, or other open pits will be required to be equipped to deter entry by birds, bats, or other wildlife.
- U. Give suppression of wildfire in riparian habitats a high priority unless fire is a natural part of the ecosystem. Riparian areas that have burned will be rehabilitated as necessary through protection, reseeding, or planting.
- V. Design and establish grazing management practices to meet riparian and other water quality needs in the development of new allotment management plans and in the revision of existing allotment management plans. In instances where the management systems alone cannot meet objectives, provisions for fencing or other means of exclusion will be used. No livestock-related activities such as salting, feeding, construction of holding facilities, or stock driveways will be allowed within riparian zones unless specifically authorized.

- W. Avoid construction activities that remove or destroy riparian vegetation.
- X. Design minerals management actions and special stipulations or conditions to be compatible with riparian habitat management goals. Riparian buffer zones will be identified and provided for in the exploration and development of mineral resources.
- Y. Herbicide treatment in riparian areas and along stream courses should be used as a last resort for vegetative restoration. When treating aquatic vegetation, follow conservation measures and BMPs presented in *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States PEIS, ROD* (2007). BMPs in this PEIS include: (1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management, (2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and (3) follow water use restrictions presented on the herbicide label.
- Z. Design all new spring developments to protect riparian areas and modify selected existing spring developments for the same reason. Where possible, and if the need exists for wildlife, parts of reservoirs will be fenced or water for livestock will be provided away from the reservoirs in consultation with the permittee. Wildlife habitat needs will be considered when reservoir site determinations are made.
- AA. Continue coordinate riparian and arroyo habitat management with other programs and activities throughout the Mimbres Resource Area, as needed. Specific programs include Range, Wildlife, Watershed, Recreation, and Lands. Riparian and arroyo habitat values will be addressed in all surface- and vegetation-disturbing actions. Stream and riparian areas will have a higher priority for funding, management, and protection than arroyo habitats.

### **2.13 VISUAL RESOURCES MANAGEMENT**

BMPs to address visual resource concerns have been incorporated into the preceding resource discussions, as appropriate. To the extent practicable, existing facilities or substantial existing visual contrasts would be brought into visual resource management class conformance as the need or opportunity arises. Additional BMPs dealing with visual resource management considerations in oil and gas development can be found on the BLM Web site at [www.blm.gov/bmp/](http://www.blm.gov/bmp/). BMPs dealing with visual resource management considerations in general are available at [www.blm.gov/nstc/VRM/destech](http://www.blm.gov/nstc/VRM/destech).