

APPENDIX C

BEST MANAGEMENT PRACTICES FOR USE WITH VEGETATION TREATMENT METHODS

Resource Element	Best Management Practices by Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
Guidance Documents	BLM H-9214-1 Handbook, Prescribed Fire Management 2000	BLM 1112 Manual (Safety)	BLM H-9011-1 and H-9015 Handbooks	BLM 1112, 4100 and 9014 Manuals
General	Prepare Fire Management Plan. Use trained personnel with adequate equipment.	Ensure that power cutting tools have approved spark arresters. Wash vehicles and equipment before leaving weed infested areas to avoid infecting weed-free areas. Minimize soil disturbance which may encourage new weeds to develop.	Prepare spill contingency plan in advance of treatment. Select chemical that is least dangerous to environment while providing the desired results. Keep records of each application, including the active ingredient, formulation, application rate, date, time, and application.	Use only biological control agents that have been tested and approved to ensure they are host-specific. Manage the intensity and duration of grazing.
Land Use	Carefully plan fires in wildland-urban interface to avoid loss of property. Notify nearby residents and landowners who could be affected by smoke intrusions or other fire effects.		Consider surrounding land use before aerial spraying. Comply with herbicide-free buffer zones to ensure that no drift will affect adjoining landowners.	
Air Quality See BLM 7000 Manual	Evaluate weather conditions, including wind speed and atmospheric stability, to predict effects of burn and impacts from smoke. Coordinate burn activities with New Mexico Environment Department. Burn when weather conditions are good for rapid smoke dispersion.	Minimize generation of dust and exhaust.	Consider effects of wind, humidity, temperature inversions, and rainfall on herbicide effectiveness and risks.	
Geology, Minerals, Oil & Gas	Maintain safety buffer between burn area and facilities.	Minimize area of surface disturbance.		
Soils	Minimize broadcast burning on highly erodible soils. Re-seed if needed following treatment to encourage revegetation and minimize erosion. Minimize soil heating by pre-treatment of fuels where practical.	Implement erosion control measures where heavy equipment is used. Limit heavy equipment use on slopes greater than 30 percent. Conduct activities on dry or frozen soil to minimize soil compaction. Avoid damage to biological crusts.	Avoid treating areas in which herbicide runoff is likely. Consider soil mobility.	

Resource Element	Best Management Practices by Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
Water Resources See BLM 7000 Manual & Memorandum of Understanding with New Mexico Environment Department	Maintain minimum buffer of 25-50 feet between burn area and water bodies. Minimize burning on hillslopes with high erosion potential and consider revegetation to mitigate. Prevent degradation of groundwater quality whenever practicable, even when Water Quality Control Commission (WQCC) standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with total dissolved solids (TDS) <10,000 mg/l.	Maintain minimum buffer of 25-50 feet between burn area and water bodies. Reseed skid trails and roads closed after operations. Install erosion-control structures on roads used. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with TDS <10,000 mg/l.	Consider climate, soil type, slope, and vegetation types in determining the risk of herbicide to water resources. Follow label instructions, especially near water bodies. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with TDS <10,000 mg/l. Evaluate site-specific potential for groundwater contamination with the Environmental Protection Agency rating system DRASTIC.	Avoid using livestock near residential or domestic water sources. Use grazing plans and systems to improve public land health. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with TDS <10,000 mg/l.
Streams & Wetlands	Maintain minimum buffer of 25-50 feet between burn area and water bodies. Minimize burning on hillslopes with high erosion potential and consider revegetation to mitigate.	Maintain minimum buffer of 25-50 feet between burn area and water bodies.	Apply buffer zones of 100 feet for aerial application, 25 feet for ground application, and 10 feet for hand application. Follow label instructions for control of saltcedar.	Avoid using livestock near residential or domestic water sources.
Vegetation See BLM H-4410-1, H-5000 & H-9015 Handbooks	Conduct burn prescriptions to minimize residual damage to desirable trees. Mitigate soil erosion by constructing erosion control structures on any control lines used.	Minimize disturbance to native vegetation by keeping equipment on existing roads and trails. Reseed skid trails and roads to be closed after operations. Install erosion control structures on roads used.	Avoid damage to non-target plants by using selective herbicides or selective equipment. Reduce drift hazard to non-target species. Minimize the use of broadcast foliar applications to reduce the creation of large areas of browned vegetation.	Use grazing animals at times most likely to damage invasive species. Exclude livestock from revegetated areas for at least two growing seasons.
Fish See BLM 6500 & 6780 Manuals	Maintain a vegetated buffer near fish-bearing streams to minimize soil erosion and soil runoff into streams.	Avoid treatments adjacent to fish-bearing waters. Refuel and service equipment away from water bodies. Maintain vegetated buffer between treatment area and water body.	Avoid treatments near fish-bearing streams during periods when fish are in life stages most sensitive to the herbicide used. Use appropriate buffer zones based on label instructions and risk.	Limit access of grazing animals to streams and other water bodies to minimize sediments entering water and potential for damage to fish habitat.

Resource Element	Best Management Practices by Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
Wildlife See BLM 6500 & 6780 Manuals	Avoid treatments during nesting and other critical periods for birds and other wildlife.	<p>Retain wildlife trees and other unique habitat features where practical.</p> <p>Vegetation management strategies should be consistent with historical succession and disturbance regimes.</p> <p>Fuels treatments should consider habitat needs of migratory and non-migratory populations.</p> <p>Avoid treatments during nesting and other critical periods for birds and other wildlife.</p>	<p>Use herbicides of low toxicity to wildlife.</p> <p>Avoid treatments during nesting and other critical periods for birds and other wildlife.</p>	
Threatened & Endangered (T&E) Species See BLM 6840 Manual	<p>Avoid direct impacts to listed species if project may impact listed species, unless studies show that species will benefit from fire.</p> <p>Survey for T&E species and consult with U.S. Fish and Wildlife Service (FWS) as needed if project may impact listed species.</p> <p>See site-specific conservation measures from Biological Evaluation.</p>	<p>Avoid use of ground disturbing equipment near T&E species.</p> <p>Survey for T&E species and consult with FWS as needed if project may impact listed species.</p> <p>See site-specific conservation measures from Biological Evaluation.</p>	<p>Survey for T&E species and consult with FWS as needed if project may impact listed species.</p> <p>See site-specific conservation measures from Biological Evaluation.</p>	
Wild Free-Roaming Horses & Burros	<p>Do not burn extensive, contiguous areas of the Herd Management Area in the same year.</p> <p>Start prescribed fires in such a way as to decrease the likelihood of horses running through fences.</p> <p>Limit burning during the peak foaling period from March 1 through June 30.</p>		Avoid using herbicides in areas actively grazed by wild horses and burros.	
Livestock See BLM H-4120-1 Handbook	<p>Notify permittees of livestock feeding restrictions in treated areas, if needed.</p> <p>Provide alternative forage sites for livestock, if use areas burn.</p>	<p>Notify permittees of livestock feeding restrictions in treated areas, if needed.</p> <p>Provide alternative forage sites for livestock, if needed.</p>	<p>Notify permittees of livestock feeding restrictions in treated areas, if needed.</p> <p>Provide alternative forage sites for livestock, if needed.</p>	

Resource Element	Best Management Practices by Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
Cultural Resources & Native American Religious Concerns See NM BLM Protocol with State Historic Preservation Officer (SHPO) and BLM 8100 & 8160 Manuals	Evaluate potential impacts of proposed treatment. Conduct cultural resource inventories to identify sites at risk from treatment. Develop avoidance measures and project-specific treatment measures to protect sites by reducing fuel loads in the vicinity of at-risk sites. Consult with SHPO and tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures (Appendix A.5, Monitoring and Adaptive Management).	Evaluate potential impacts of proposed treatment. Conduct cultural resource inventories to identify sites at risk from treatment. Develop avoidance measures and project-specific treatment measures to protect sites by reducing fuel loads in the vicinity of at-risk sites. Consult with SHPO and tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures.	Evaluate potential impacts of proposed treatment. If application methods involve ground-disturbing activities, conduct cultural resource inventories and implement avoidance measures. Consult with SHPO and tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures.	Evaluate potential impacts of proposed treatment. If application methods involve ground disturbing activities, conduct cultural resource inventories as appropriate, and implement avoidance measures. Consult with SHPO and tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures.
Visual Resources See BLM 8400 Manual & H-8410-1 Handbook	Minimize or avoid prescribed burning under conditions that could result in smoke impacting Prevention of Significant Deterioration (PSD) Class I areas. Maintain natural vegetated buffer between burn areas and public high use areas. Revegetate treated sites if needed. Use existing roads and minimize fireline construction.	Minimize dust drift, especially near recreational or other public use areas. Minimize earthwork and locate away from prominent topographic features. Revegetate treated sites if needed.	Minimize the use of broadcast foliar applications to reduce the creation of large areas of browned vegetation. Minimize herbicide drift.	
Wilderness Areas See BLM H-8550-1, 8560-1 Handbooks, 8351, 8560 Manuals, and specific instructions in Fire Mgt. Unit descriptions & Appendix F of Resource Advisor Guide	Minimize or avoid soil-disturbing activities during fire suppression or prescribed fire activities. Revegetate sites with native species if there is no reasonable expectation of natural regeneration.	Use least intrusive methods possible to achieve objectives, and use non-motorized equipment where possible.	Revegetate sites with native species unless there is no reasonable expectation if natural regeneration. Use hand treatments of herbicides only when weeds are spreading within the wilderness or threaten lands outside the wilderness.	Use least intrusive methods possible to achieve objectives, and use non-motorized equipment where possible.

Resource Element	Best Management Practices by Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
Recreation See BLM H-1601-1 Handbook	Control public access to potential burn areas.	Control public access until potential treatment hazards no longer exist.	Control public access until potential treatment hazards no longer exist. Post signs noting exclusion areas and duration of exclusion.	
Rights-of-Way	Avoid or minimize prescribed burning under powerlines.			
Health & Safety	Use some form of pre-treatment, such as mechanical or manual treatment, in areas where fire cannot be safely introduced due to hazardous build-up. Always use appropriate safety equipment and personal protective equipment (PPE). Notify nearby residents who could be affected by smoke.	Always use appropriate safety equipment and PPE.	Always use appropriate safety equipment and PPE. Have copy of Material Safety Data Sheets at work site. Follow label instructions and BLM procedures in H-9011-1, 1112, and 9015 Handbooks.	Always use appropriate safety equipment and PPE.