

**Mitigation Measures from the
 Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States PEIS and ROD (2007)
 Proposed for use in the Vegetation Treatments Using Herbicides on BLM Lands in Oregon EIS**

RESOURCE	MITIGATION MEASURES
Air Quality	None proposed.
Soil Resources	None proposed.
Water Resources and Quality	<ul style="list-style-type: none"> • Use appropriate (herbicide-specific) buffer zones¹ to downstream water bodies, habitats, and species/populations of interest. • Areas with potential for groundwater for domestic or municipal water use shall be evaluated through the appropriate, validated USEPA model(s) to estimate vulnerability to potential groundwater contamination, and appropriate mitigation measures shall be developed if such an area requires the application of herbicides and cannot otherwise be treated with nonchemical methods.
Wetland and Riparian Areas	<ul style="list-style-type: none"> • See mitigation for Water Resources and Quality and Vegetation. Wetland and Riparian Areas
Vegetation	<ul style="list-style-type: none"> • Minimize the use of terrestrial herbicides (especially bromacil, diuron, and sulfometuron methyl) in watersheds with downgradient ponds and streams if potential impacts to aquatic plants are identified. • Use appropriate (herbicide-specific) buffer^{2,3} zones around downstream water bodies, habitats, and species/populations of interest. • Limit the aerial application of chlorsulfuron and metsulfuron methyl to areas with difficult land access, where no other means of application are possible. Do not apply sulfometuron methyl aerially. • To protect special status plant species, implement all conservation measures for plants presented in the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment</i>.
Fish and Other Aquatic Organisms	<ul style="list-style-type: none"> • Limit the use of diquat in water bodies that have native fish and aquatic resources. • Limit the use of terrestrial herbicides (especially diuron) in watersheds with characteristics suitable for potential surface runoff that have fish-bearing streams during periods when fish are in life stages most sensitive to the herbicide(s) used. • To protect special status fish and other aquatic organisms, implement all conservation measures for aquatic animals presented in the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment</i>. • Use appropriate herbicide-specific buffer zones^{i,iii} for water bodies, habitats, or fish or other aquatic species of interest. • Consider the proximity of application areas to salmonid habitat and the possible effects of herbicides on riparian and aquatic vegetation. Maintain appropriate buffer zones^{i,iii} around salmonid-bearing streams. • Avoid using the adjuvant R-11® in aquatic environments, and either avoid using glyphosate formulations containing polyoxyethyleneamine (POEA), or seek to use formulations with the least amount of POEA, to reduce risks to aquatic organisms in aquatic environments. • At the local level, consider effects to special status fish and other aquatic organisms when designing treatment programs.



RESOURCE	MITIGATION MEASURES
Wildlife	<ul style="list-style-type: none"> • To minimize risks to terrestrial wildlife, do not exceed the typical application rate for applications of dicamba, diuron, glyphosate, hexazinone, tebuthiuron, or triclopyr, where feasible. • Minimize the size of application areas, where practical, when applying 2,4-D, bromacil, diuron, and Overdrive® to limit impacts to wildlife, particularly through contamination of food items. • Where practical, limit glyphosate and hexazinone to spot applications in rangeland and wildlife habitat areas to avoid contamination of wildlife food items. • Avoid using the adjuvant R-11® in aquatic environments, and either avoid using glyphosate formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risks to amphibians. • Do not apply bromacil or diuron in rangelands, and use appropriate buffer zonesⁱⁱ to limit contamination of off-site vegetation, which may serve as forage for wildlife. • Do not aerially apply diquat directly to wetlands or riparian areas. • To protect special status wildlife species, implement all conservation measures for terrestrial animals presented in the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment</i>.
Livestock	<ul style="list-style-type: none"> • Minimize potential risks to livestock by applying diuron, glyphosate, hexazinone, tebuthiuron, and triclopyr at the typical application rate, where feasible. • Do not apply 2,4-D, bromacil, dicamba, diuron, Overdrive®, picloram, or triclopyr across large application areas, where feasible, to limit impacts to livestock, particularly through the contamination of food items. • Where feasible, limit glyphosate and hexazinone to spot applications in rangeland. • Do not aerially apply diquat directly to wetlands or riparian areas used by livestock. • Do not apply bromacil or diuron in rangelands, and use appropriate buffer zonesⁱⁱ to limit contamination of off-site rangeland vegetation.
Wild Horses and Burros	<ul style="list-style-type: none"> • Minimize potential risks to wild horses and burros by applying diuron, glyphosate, hexazinone, tebuthiuron, and triclopyr at the typical application rate, where feasible, in areas associated with wild horse and burro use. • Consider the size of the application area when making applications of 2,4-D, bromacil, dicamba, diuron, Overdrive®, picloram, and triclopyr in order to reduce potential impacts to wild horses and burros. • Apply herbicide label grazing restrictions for livestock to herbicide treatment areas that support populations of wild horses and burros. • Where practical, limit glyphosate and hexazinone to spot applications in rangeland. • Do not apply bromacil or diuron in grazing lands within herd management areas (HMAs), and use appropriate buffer zonesⁱⁱ to limit contamination of vegetation in off-site foraging areas. • Do not apply 2,4-D, bromacil, or diuron in HMAs during the peak foaling season (March through June, and especially in May and June), and do not exceed the typical application rate of Overdrive® or hexazinone in HMAs during the peak foaling season in areas where foaling is known to take place.
Paleontological and Cultural Resources	<ul style="list-style-type: none"> • Do not exceed the typical application rate when applying 2,4-D, bromacil, diquat, diuron, fluridone, hexazinone, tebuthiuron, and triclopyr in known traditional use areas. • Avoid applying bromacil or tebuthiuron aerially in known traditional use areas. • Limit diquat applications to areas away from high residential and traditional use areas to reduce risks to Native Americans and Alaska Natives.
Visual Resources	None proposed.

RESOURCE	MITIGATION MEASURES
Wilderness and Other Special Areas	Mitigation measures that may apply to wilderness and other special area resources are associated with human and ecological health and recreation (see mitigation measures for Vegetation, Fish and Other Aquatic Resources, Wildlife Resources, Recreation, and Human Health and Safety).
Recreation	Mitigation measures that may apply to recreational resources are associated with human and ecological health (see mitigation measures for Vegetation, Fish and Other Aquatic Resources, Wildlife Resources, and Human Health and Safety).
Social and Economic Values	None proposed.
Human Health and Safety	<ul style="list-style-type: none"> • Use the typical application rate, where feasible, when applying 2,4-D, bromacil, diquat, diuron, fluridone, hexazinone, tebuthiuron, and triclopyr to reduce risk to occupational and public receptors. • Avoid applying bromacil and diuron aerially. Do not apply sulfometuron methyl aerially. • Limit application of chlorsulfuron via ground broadcast applications at the maximum application rate. • Limit diquat application to ATV, truck spraying, and boat applications to reduce risks to occupational receptors; limit diquat applications to areas away from high residential and subsistence use to reduce risks to public receptors. • Evaluate diuron applications on a site-by-site basis to avoid risks to humans. There appear to be few scenarios where diuron can be applied without risk to occupational receptors. • Do not apply hexazinone with an over-the-shoulder broadcast applicator.

(Endnotes)

- 1 See Appendix C of the National PEIS, Table C-16 (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) for appropriate buffer zones, which can vary based on the type of plant, and application method.
- 2 See Tables 4-12 and 4-14 in Chapter 4 of the National PEIS (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) for appropriate buffer zones, which can vary based on the type of plant, and application method.
- 3 Consult the ecological risk assessments (ERAs) in Appendix C of the National PEIS (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) for more specific information on appropriate buffer distances under different soil, moisture, vegetation, and application scenarios.