

<b>15. Pesticides</b>					
<b>ISSUE 15.1</b>	Some herbicide use recommendations for sagebrush treatment in GrSG habitat are obsolete.				
<b>OBJECTIVE 15.1.1</b>	Update recommendations on sagebrush herbicide treatment methods that reduce adverse impacts to and/or improve GrSG habitat.				
<b>Reference Number</b>	<b>Conservation Strategy</b>	<b>Responsible Parties</b>	<b>Timeline</b>	<b>Implementation</b>	<b>Effectiveness</b>
15.1.1.1	Conduct research on the effects of various herbicide treatments on GrSG habitat. <b>[See Research Strategy 21.1.2.1]</b>	BLM, CDA, CPW, LWGs, NRCS, Private Landowners, UCEPC, USFS, USFWS, USGS	Begin by 2015	<b>UCEPC</b> installed a native seed mix in 2012 in GSG habitat in a post-herbicide treated area. Used site as source of information on which species respond positively to herbicide application and revegetation success, compared with non-treatment areas.	
15.1.1.2	Using an interagency team approach, develop recommendations for methods of sagebrush herbicide treatments that reduce adverse impacts to and/or improve GrSG habitat.	BLM, CPW, LWGs, NRCS, USFS, USFWS	2008	<b>CPW: General</b> - CPW biologists interact regularly with BLM, NRCS, and private lands biologists to plan GrSG enhancement projects. CPW routinely comments on project proposals to improve their benefit or reduce their impact on GrSG.	
<b>ISSUE 15.2</b>	Sagebrush herbicide treatment methods that have fewer adverse impacts to GrSG habitat can be more expensive than traditional methods.				
<b>OBJECTIVE 15.2.1</b>	Encourage the use of non-traditional sagebrush herbicide treatments that have fewer adverse impacts to GrSG habitat.				
<b>Reference Number</b>	<b>Conservation Strategy</b>	<b>Responsible Parties</b>	<b>Timeline</b>	<b>Implementation</b>	<b>Effectiveness</b>
15.2.1.1	Provide monetary incentives to promote the use of non-traditional herbicide treatments where appropriate in GrSG habitat (see "Habitat Enhancement" strategy, pg. 349).	CPW, NRCS, USFWS	Ongoing	<b>CPW: NWCO</b> - CPW, BLM, and NRCS designed and implemented (with cost-share funding for landowners) several non-traditional sagebrush herbicide treatments on Cold Spring Mountain to replace plans for large scale spraying with small, random treatment areas by varying the distribution of herbicide.	<b>CPW: General</b> - CPW provides project funding (including cost share with other agencies) for GrSG enhancement projects. Use of the funding requires that projects be designed to improve GrSG.
<b>ISSUE 15.3</b>	Land managers are not informed about the various herbicide treatment methods and associated impacts to GrSG habitat.				
<b>OBJECTIVE 15.3.1</b>	Inform land managers about sagebrush herbicide treatment methods and the associated impacts to GrSG habitat.				
<b>Reference Number</b>	<b>Conservation Strategy</b>	<b>Responsible Parties</b>	<b>Timeline</b>	<b>Implementation</b>	<b>Effectiveness</b>
15.3.1.1	Conduct local field trips to observe the results of different herbicide treatment methods in GrSG habitat. <b>[See also Information, Communication, and Education Strategies 12.2.1.3 and 12.3.1.1]</b>	CPW, CSU Extension, LWGs, NRCS, Private Landowners	2008	<b>CPW: NWCO</b> - CPW has participated in several field trips in central Moffat County to evaluate herbicide applications, including "thinning rate" treatments where varying amounts of herbicide were used.	

Reference Number	Conservation Strategy	Responsible Parties	Timeline	Implementation	Effectiveness
15.3.1.2	Provide technical assistance and information to land managers regarding herbicide treatment design and application methods that minimize adverse impacts to GrSG habitat.	BLM, CPW, NRCS, USFWS, USFS	2008	<b>CPW: General</b> - CPW staff routinely provides technical assistance with herbicide (and other GrSG habitat treatment) design. CPW's recently hired sagebrush steppe habitat coordinator's role includes providing technical assistance with project design, both inside and outside the agency. CPW provides part of the salary of 3 private lands biologists housed in NRCS offices who also provide technical assistance with project design.	
<b>ISSUE 15.4</b>	Insecticide used for Mormon cricket control has the potential to impact GrSG.				
<b>OBJECTIVE 15.4.1</b>	Avoid using Mormon cricket treatments that are harmful to GrSG.				
Reference Number	Conservation Strategy	Responsible Parties	Timeline	Implementation	Effectiveness
15.4.1.1	Provide information on (1) important GrSG areas to avoid; (2) best timing for applications; and (3) least toxic methods of control, to aerial applicators of insecticides used to control Mormon crickets.	CPW, CSU Extension	Ongoing	<b>CPW: NWCO</b> - CPW has provided guidance during Mormon cricket outbreaks on areas to avoid during baiting operations to minimize effects on GrSG (particularly chicks). CPW's recommendations include the use of less toxic and less persistent baits.	