

Item #12: Elk and Mule Deer Winter Range Browse Production

Evaluation Objectives: To evaluate relationship between elk and mule deer winter range browse production, elk and mule deer populations, and forest management practices.

Methods: Browse production on tree-dominated sites is determined by the percent of tree canopy closure as it relates to plant successional stage. On shrub-dominated sites, browse production is greatest for the early years following a disturbance. Browse production is estimated by the amount of conifer dominated stands compared to open or early seral stands.

Evaluation: Forage conditions on winter ranges have not been calculated since the 1991 monitoring report that described conditions as 17.5% of the winter range (of 58,844 acres) were considered forage or forest forage habitat. About 10% of nontimber production sites had been treated between 1986-1991 to improve forage production. Habitat improvement projects from 1992-97 resulted in approximately 15% of shrub dominated elk and mule deer winter range sites receiving treatment to improve forage production. Projects since 1998 have improved over 24,000 acres for big game and other species (Table 12-1). These acres do not include acres associated with security habitat as a result of motorized access management restrictions or wildfire. Improvement acres are provided below and reflect total acreage. While these are not reported by winter or summer habitat, the forest does place an emphasis on treating winter range.

In the early 1990s, an annual average of 800 acres were improved primarily for big game. During the period after 1997, an annual average of 1,400 acres were improved primarily for big game. Additional acres (400 annual pre-1997 and 1,400 annually post-1997) of habitat improved primarily for threatened and endangered species and therefore would generally have improved conditions for big game as well. This amount of habitat improvement acres for wildlife and threatened and endangered species is well above the +/-200-300 acres estimated annual from the Forest Plan desired condition. In addition to this timber harvest, wildfire and fire use management have created a diversity of habitat conditions generally favorable for big game. Thousands of acres have also been improved for grizzly bear habitat security through access management accomplishments such as road decommissioning and motorized vehicle restrictions (see Table 16b-10 in item 16).

Prescribed fire is being used more for wildlife habitat improvement projects and is being used in many forest locations to reduce fuel concentrations. Some of these areas are in winter, transitional, or summer ranges. In times of mild winters, many non-traditional areas are utilized by big game as higher elevations remain snow free. Thousands of acres of wildfire have occurred since 2000 which also contribute to forage production.

Table 12-1. 1998 – 2007 Projects to Improve Forage Production for Big Game

Year	Ranger District	Project Name	Acres burned or slash/burn	Acres tree or shrub slashing	Acres shrub planting	Acres weeding	Variou s Acres	Acres Acquire d
1998	GV	Cedar Ridge	100					
1998	HH	Logan Creek	100					
1998		Reid Divide		150				

1998	SL/TL	Various locations			145			
1998	SB	Dry Pk, Horse Ridge, Bent Flat Weeds				1000		
1998	SL	Hunger Creek Burn	125					
1998	SL	Wolf Creek Burn	250					
1998	SL	Patrick Stoner Burn	120					
1999	SB	Dry Park/Crossover Mtn	1553					
1999	HH	Red Bench		240				
1999	HH	Dean Ridge Burn	1500					
1999	HH	Spruce Creek		40				
1999	SL	Weed Lake Burn	150					
1999	SL	Dog Creek Burn	200					
1999	SL	Tierra North	1160					
1999	SL	Lower Sixmile				55		
1999	SL	Land Acquisition						1802
2000	SL	Deer Creek Burn	100					
2000	SL	Wolf Creek Burn	250					
2000	SL	Bear Creek Burn	300					
2000	SL	Crane Mtn			25			
2000	SL	Land Acquisition						705
2000	TL	Fly Round (WERNER)?	115		75			
2001	SL	Land Acquisition						1111
2001	SL	Gunderson Creek Burn	125					
2001		from WFRP						1100
2002	SB	Bob Marshall Weed Control				70		
2002	SL	Sixmile		75				
2002	SL	Orvis Evans	600					
2002	SL	Birch Creek	175					
2002	SL	Patterson Creek	700					
2002	SL	Schmidt Creek	600					
2003	HH	Paint-Emery	517					
2003	SB	Bob Marshall Weed Control				x		
2003	SL	Land Acquisition						2296
2004	SB	Bob Marshall Weed Control				x		
2004	SL	Red Owl Burn	200					
2004	SL	Haskill East Burn	105					
2004	SL	Upper Weed Burn	50					
2004	SL	Land Acquisition						1185
2004	SL	Sixmile Mountain Area		50				
2005	SB	Bob Marshall Weed Control				x		
2005	SL	Shrub and Tree Planting			100			
2005	SL	Land Acquisition						95
2006	SB	Bob Marshall Weed Control				x		
2006	SL	Land Acquisition						1018
2006	HH	Paint-Emery/Firefighter	2350					
2006	SL+TL	Shrub and Tree Planting			368			

2006	SL	Sixmile Burn	650					
2007	SB	Bob Marshall Weed Control				x		
2007	SL	Parker Creek Burn	250					
2007	SL	Glen Creek Burn	80					
		TOTALS	12,425	555	713	1,125	1100	8212

An analysis of forage production, based upon forage habitat on tree dominated sites and treatment intervals on shrub dominate sites has not been completed. There are good reasons why browse data are not collected. The ecological and political issues involved are overwhelmingly complex. Typically, more than one ungulate species is involved, and often the ungulates occupy different ranges at different times of the year. With these complexities, even the beginning step of data collection might be abandoned. Second, some of the methods, such as determining the percent-twigs-browsed, require a great deal of time in a small area before a usable dataset is acquired. Under these circumstances, acquiring data at the landscape level is unrealistic. Biologists simply lack the time required to collect data. Third, the data collected does not necessarily indicate if the browsing is at acceptable or excessive levels. For example, determining the percent-twigs-browsed tells the manager something about the level of herbivory, but without a separate study to document the physiological effects of that herbivory, the manager cannot be sure how browsing will affect the shrub community. This uncertainty lessens the enthusiasm for data collection. The lack of certainty also influences the manager's ability to explain management decisions to interested parties, including other resource managers, grazing permittees, environmental groups, and sportsman's groups. Given the problems described above, the collection of browse data may become a daunting project. There are ways to improve the situation. Complex issues can be simplified by focusing on key areas and indicator species.

An alternative is to evaluate habitat conditions and needs at the project level. Habitat improvement acreage has increased since the last reporting period and it is more acres than expected under Forest Plan desired conditions. Management of elk and mule deer winter ranges to provide forage is important to maintain or improve elk population levels, but other elements of winter range management are also important. Current winter range management gives consideration to hunting season cover needs, increased vulnerability due to improved hunter access, the maintenance of an interspersion of cover and forage blocks, treatments occurring on adjacent lands, lower than required budgets for treatment implementation, and habitat considerations for other wildlife species. In addition, mild winters, severe winters, predation, early snow cover during the harvest, habitat loss due to private land development, and liberalized hunting opportunities also affect the population. With the recent national emphasis from the National Fire Plan and community protection through the management of WUI, fuel reduction needs undoubtedly decrease canopy coverage while likely increasing forage production.

Recommended Action: In addition to habitat quality and quantity, many factors other than Forest Service management can influence big game populations. The state has the responsibility to monitor big game and harvest success, to regulate the harvest accordingly for sustainable populations. The FNF should 1) continue consulting with Montana FWP biologists to arrive at site specific objectives for the affected habitat and 2) continue to evaluate cover/forage, road density and other relationships for effects analysis at the project level, while addressing the cumulative effects of prescribed burning, wildfire and timber harvest or fuels reduction for WUI community protection projects. From a Forest Service perspective, measures of MT FWP

harvest/trend statistics, habitat security and access management changes, and acres of habitat improvement are important features of big game management and should be used as surrogates to indirectly estimate the effects of forest management on big game.