

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION GUIDE SHEET**

BRUSH MANAGEMENT

(ac.)
CODE 314

GENERAL CRITERIA

Brush, as used in this standard includes woody half-shrubs, shrubs, and trees that invade areas on which they are not part of the natural plant community or that occur in amounts significantly in excess of that natural to the site.

Brush management should not be applied on sites with less than 25 percent canopy cover unless large numbers of young brush plants are already present and will dominate the plant community at greater than 25 percent or more canopy cover by the end of the planning horizon.

The use of brush control methods having the least potential hazard to humans, other animals, and the environment shall be encouraged. Non-chemical methods of brush management shall be recommended whenever feasible.

Brush management may be applied to the following species:

Common Name	Scientific Name
Ponderosa Pine	<i>Pinus ponderosa</i>
Eastern Red Cedar	<i>Juniperus virginiana</i>
Rocky Mountain Juniper	<i>Juniperus sopulorum</i>
Fringed Sagewort	<i>Artemisia frigida</i>
Green Sagewort	<i>Artemisia dracunculus</i> or <i>campestris</i>
Big Sagebrush	<i>Artemisia tridentata</i>
Sand Sagebrush	<i>Artemisia filifolia</i>
Silver Sagebrush	<i>Artemisia cana</i>
Western Snowberry	<i>Symphoricarpus occidentalis</i>
Russian Olive	<i>Elaeagnus angustifolia</i>
Smooth Sumac	<i>Rhus glabra</i>
Plains Pricklypear	<i>Opuntia polykantha</i>
Siberian Elm	<i>Ulmus pumila</i>

Species not contained in the list above may be treated after consultation and approval by the state rangeland management specialist.

METHODS

Chemical Treatment

Specifications for the kind of chemical, methods, and time of application will be in accordance with the chosen chemical label and the latest publications such as "Weed Control in Grass Pasture and Range Fact Sheet 525P" published by South Dakota State University, Cooperative Extension Service. Chemical rates should not exceed label recommendations but may be less if recommended in the above publication.

All chemicals will be handled and applied in accordance with label directions and federal, tribal, state and local regulations. Chemical treatments will be conducted in accordance with the 595-Pest Management Standard.

Prescribed Burning

Prescribed burning will be conducted in accordance with the 338 - Prescribed Burning Standard. All prescribed burning will be conducted in accordance with federal, state, tribal, and local laws and regulations.

Mechanical Treatment

Equipment will consist of mowers, choppers, beater, bulldozers, blades, rails, chains, scrappers, or other suitable equipment.

Biological Treatment

Grazing with different kinds and classes of livestock or during critical growing stages of plants or hoof action associated with winter feeding operations, salt and mineral placement, and/or intensive prescribed grazing can effectively reduce some brush species. Specifications for biological treatment will be developed based on local conditions. Grazing will be conducted in accordance with the 528 - Prescribed Grazing Standard.

SPECIES SPECIFIC TREATMENT RECOMMENDATIONS

Ponderosa Pine – The preferred method of controlling pine encroachment is prescribed burning. Burning prior to the time trees reach a height of six feet will provide excellent control, insure adequate fine fuels, and reduce hazards associated with prescribed fire in a least cost manner. Mechanical methods such as cutting individual trees or dozing are effective but labor and cost intensive. Chemical methods are also available but are generally cost prohibitive. In areas where applicable, the thinning of Ponderosa Pine to commercial timber production levels may provide an additional source of income while maintaining desirable understory vegetation. See conservation practice Forest Stand Improvement (666) for information on thinning.

Eastern Red Cedar and Rocky Mountain Juniper- The preferred method of controlling cedar or juniper encroachment is prescribed burning. Burning prior to the time trees reach a height of five feet will provide excellent control and ensure adequate fine fuels to carry a fire. Mechanical methods such as cutting individual trees, dozing, chaining, and cabling are effective but labor and/or cost intensive. Chemical methods are also available, but generally less cost effective than prescribed burning.

Fringed and Green Sagewort – Chemical control methods are preferred due to this species ability to sprout from roots and plant bases following treatments such as prescribed burning or mechanical treatments such as blading. Utilizing alternative grazing animals such as sheep and goats can be effective in controlling this species.

Big Sagebrush – Prescribed burning is the preferred least cost control method. Chemical control is also effective if burning is not possible. Mechanical methods such as chaining and cabling are generally not as effective and are higher cost. Utilizing alternative grazing animals such as sheep and goats can be effective in controlling this species.

Sand and Silver Sagebrush - Chemical control methods are preferred due to this species ability to sprout from roots and plant bases following treatments such as prescribed burning or mechanical treatments such as blading. Utilizing alternative grazing animals such as sheep and goats can be effective in controlling this species.

Western Snowberry - Chemical control methods are preferred due to this species ability to sprout from roots and plant bases following treatments such as prescribed burning or mechanical treatments such as blading. Utilizing alternative grazing animals such as sheep and goats can be effective in controlling this species. There is some evidence that hoof action associated with winter feeding of livestock, salt and mineral placement, and intensive prescribed grazing directly within colonies of this species will reduce its density.

Russian olive and Siberian Elm – Chemical control methods are generally most effective. Mechanical control methods such as dozing, cabling, or sawing individual trees work well but are labor and cost intensive. There is some evidence these species may sprout following burning. Stumps of

individually sawn trees should be chemically treated to prevent sprouting. Control of these species is most effective where trees are under five feet in height.

Smooth Sumac - Chemical control methods are preferred due to this species ability to sprout from roots and plant bases following treatments such as prescribed burning or mechanical treatments such as blading. Control of these species is most effective where trees are under five feet in height.

Plains Pricklypear – Chemical control methods generally produce the best control. Dense stands of pricklypear can be reduced by blading just below the surface into windrows; however, windrows should be turned the following year to prevent bladed pads from re-establishing. If adequate fine fuels are present prescribed burning can provide excellent control.

MANAGEMENT AFTER TREATMENT

If chemical methods of brush management are utilized all label restrictions concerning grazing, haying, or other uses will be followed.

Deferment periods required after this practice is applied will be for two years (treatment and following year). The deferment period will be for a minimum of 60 percent of the growing season each year. The growing season is considered to be May 1 to October 15.

Prescribed grazing should be applied to all treated areas to ensure the desired response from the treatments.

WILDLIFE HABITAT

Brush Management will be planned and applied in a manner to meet the habitat requirements of the wildlife of concern.

Areas of critically important wildlife habitat shall be addressed when planning this practice. Brush management will not be applied on steep escarpments, riparian areas, ravines, woody draws, and on areas containing shrubs and trees desirable for the wildlife species of concern.

Some common woody plants that are valuable for wildlife food and cover include: American elm, American plum, Bearberry, Box elder, Bur oak, Chokecherry, Cottonwood, Currants, Dogwood, and Green ash, other species beneficial to wildlife include: Hackberry, Hawthorn, Hazelnut, Highbush cranberry, Juneberry, Gooseberry, Rose species, Leadplant, Aspen, Sand cherries, Buffaloberry, Skunkbush, Wild grape, and Willow species.

Leaving a 5 to 15 percent canopy cover of existing brush species within the treated area either as a block or a mosaic of treated and untreated areas will decrease the potential of any negative impacts to wildlife associated with this practice.

CONSIDERATIONS

Consider present and future land use opportunities, expected effect on wildlife habitat, potential recreation impacts, aesthetic changes, positive and negative onsite and offsite environmental impacts, possible hazards, costs, grazing management, technical requirements, and maintenance.

Timing and sequence of brush management in a pasture and/or the entire operating unit should be planned to ensure required forage is available.

Consider soil erosion potential and difficulty of vegetation establishment when choosing a method of control that causes soil disturbance, when slopes are steep, or when under story vegetation is not immediately adequate.

In situations where desirable under story vegetation is not present in adequate amounts to meet objectives, consider seeding using the practice Critical Area Planting (342).

Mechanical, chemical, biological, and prescribed burning methods of brush control may be used singly or in combination depending on such factors as the kind of land (site), topography, brush species, ability of target species to resprout, the size, abundance, and distribution of brush species, hazards associated with treatment, objectives of the land user, and costs in relation to expected benefits.

When conducting mechanical brush control methods, any potential impacts on cultural resources will be considered.

Brush management objectives and procedures may be different for different kinds of land and different land uses. For example:

If primary use of rangeland is for domestic livestock, then the objectives may be to manipulate numbers, species, and distribution of brush species to approximate that of natural conditions. If use is also for wildlife, the objective may be to maintain more brush species than is natural to the site and to manage the brush in a pattern on the land that favors both livestock and wildlife.

The objective may be to maintain a plant community that is not natural to the site but that provides soil protection and benefits planned land uses. Control of these species is most effective where trees are under five feet in height.

It is usually desirable to exclude all brush on pasture and hay lands except for odd areas or areas left for shade, wildlife, or aesthetic value.

Brush on land where wildlife is a primary or important use should be manipulated to provide optimum wildlife habitat and to facilitate wildlife management as outlined within a wildlife habitat management plan.