NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

BRUSH MANAGEMENT – JUNIPER CONTROL

(Acre)
314A

I. SCOPE

The work shall consist of removal invading new-growth (less than 100 years old) juniper from sagebrush steppe and associated grassland and rangeland habitats consistent with the goals and objectives for this practice. This specification applies to those areas where understory sagebrush steppe plant species remain intact on site and where treatment of juniper is most likely to facilitate recovery of the desired habitat.

Post-treatment cover levels of new-growth juniper is assumed to approach 0% except where associated with rock outcrops, lava spurs or areas specifically identified within the treatment plan.

II. AREAS AND TIMING

The areas to be treated shall be shown on the plans and, the methods used, target species, and timing of treatment are all shown on the practice requirement sheet and supporting materials.

III. GENERAL REQUIREMENTS

Old growth juniper shall be flagged in advance and excluded from this treatment. Consult figure 1 in conjunction with Table 1 within this specification for details regarding how to differentiate between old growth juniper and young juniper.

A cultural resources survey will be completed and resulting requirements incorporated into applications of this practice so no disturbance occurs to identified cultural resources. This cultural resource survey will occur prior to mechanical, manual treatment or other site disturbance from such activities and including but not limited to the development temporary mechanical access roads, burning of piled materials and establishment of trails, skid trails, and associated landings. These avoidance measures are also applicable to any associated post-treatment operations such as application of erosion control measures and temporary road deconstruction.

Cultural resource sites identified during a cultural resource survey or during other activities shall not be mechanically or manually treated except with concurrence from the NRCS State or Area Cultural Resources Specialist in consultation with the State Historic Preservation Officer.

Damage to non-juniper species shall be minimized except where consistent with the goals and purpose of the conservation plan. Such species will be identified in the plans, practice requirement sheet and supporting materials.

Rock outcrops and lava spurs shall remain untreated except where specifically identified as consistent with a habitat recovery plan for the site.

Where livestock grazing occurs within the treatment area, released vegetation shall be allowed to recover prior to grazing. A grazing plan will be developed consistent with the goals of the conservation plan.

Treatment equipment shall not be used or traffic across eroding features, riparian zones, springs, wetlands and aspen stands. Unless specifically noted in the treatment plan and supporting maps, manual methods shall replace mechanical treatment where treatment is to occur within 25’ of any perennial stream, seasonal stream, spring or pond. Where tracked vehicles are used, turning in-place should be minimized to avoid unnecessary impacts to soils, non-target plants and other resources.

The road/traffic plan shall be adhered to as consistent with minimizing impacts to cultural and natural resources. The road/traffic plan establishes the primary access routes for repeated vehicular traffic to, from and across the treatment area including identification of primary skid trails, landings, and burn pile locations in order to minimize disturbance throughout the treatment period. Populations of sensitive plant species and/or habitat as identified on the practice requirement sheet and/or supporting documentation will be avoided such that vehicle traffic, skidding and other associated activities reduce potential impacts to identified resources.

Crossing with equipment through natural drainages on the landscape will be avoided and where crossings are necessary and identified on the road/traffic plan, the number of passes will be minimized. Measures will be taken to avoid creating artificial drainage networks which increase the likelihood of erosion; road berms, tire ruts and other artificial diversions associated with this treatment will be removed or modified in order to reduce hydrologic connectivity which can lead to gully development and impacts to off-site resources.

Unless otherwise noted on the practice requirement sheet, all trails/roads, burn pile locations, slash trails and sensitive resources will be flagged on site in advance of the treatment and in accordance with this specification, the practice requirement sheet and supporting documentation such as the cultural resource survey, the road/traffic plan, botanical surveys and other site-specific requirements supporting the appropriate implementation of this practice.

Unless otherwise noted on the practice requirement sheet, areas of soil disturbance such as skid trails and temporary roads will be protected from erosion through the placement of juniper slash sufficient to reduce rate of overland water flow and raindrop impact. Where identified on the practice requirement sheet, seeding for erosion control will be consistent with Critical Area Planting (342) or Range Planting (550).

Prior to arriving at the treatment site, all equipment will be cleaned in order to reduce the introduction of noxious weed seed such as cheatgrass and medusahead. Treatment equipment will be cleaned prior to departing the site and personnel transport vehicles will be inspected daily or as needed to prevent the spread of such noxious species between sites.

Dry season operations will be done in a manner consistent with fire safety precautions and in reference to up to date information from local, state and federal fire authorities. Activities performed under this practice will be achieved in a manner in consideration of fire and fuel loading issues regardless of the timing of the treatment. In most cases, it will be necessary to consult with fire authorities prior to implementing the practice in order to assess relative risk to on-site and/or off-site as a result of fuel loading in the treatment area. Except where specifically consistent with an approved burn plan, the distribution of downed material will be in a manner which reduces the occurrence of ladder fuels and/or places on or off-site resources at undue risk of ignition.

IV. METHODS

Methods to be used are described in the conservation plan and noted on the practice requirement sheet and supporting materials:

- Manual Treatment - Individual plants are cut down with chainsaw or other hand-held cutting tools.

- Mechanical Treatment - Individual plants are cut down and/or removed using tracked feller buncher, hydraulic sheer, articulated grinder, Hydro-Ax or other equipment specified in the plans and shown on the practice requirement sheet. All mechanical treatments are limited to where average slopes are less than 25% in order to reduce impacts of mechanical treatment on non-target species and soil condition. Use of articulated grinders or other masticators which shred standing material may greatly reduce or eliminate the need for additional post treatment of biomass where juniper cover is less than 15% unless otherwise noted on the practice requirement sheet.

- Chemical Treatment – Individual or groups of plants are treated using approved materials consistent with the chemical label and associated legal requirements.

V. BIOMASS POST-TREATMENT OPERATIONS

Post-treatment of coarse woody debris (biomass) will be consistent with the goals and objectives of the conservation plan and as detailed in the practice requirement sheet and supporting materials. Soil disturbance will be minimized through adherence to the road/traffic plan and temporary water diversions such as waterbars will be removed where accumulation of surface flows are likely to result in gully erosion and/or impacts to on-site and/or off-site resources. Some alternatives for post treatment operations may be used in combination with each other in order to achieve the desired post treatment conditions. Unless otherwise noted on the practice requirement sheet, an acceptable range of juniper debris is an average 5% to 35% cover; this includes material in contact with the soil as well as that above the soil surface such as removed tree limbs and felled trunks.

Post-treatment operations include:

- Chipping – Coarse woody debris is mechanically chipped on or off -site and is left on site or removed for proper disposal such as for co-gen energy production. Except where specifically described in the treatment plan, when left on site to naturally decompose, chip depth will not exceed 3" across the treatment area and will not exceed 2" in depth in any area exceeding 100 square feet so as to allow germination and recovery of sagebrush steppe plant species. Chipping of cut material is mainly applicable to treatments of juniper stands having primarily over 25% canopy cover.
- Piling and Burning – In order to reduce the potential for substantial increases of invading annual plants, burning will occur when soils are frozen or saturated. Burn pile locations will be sited within the treatment area unless otherwise noted on the practice requirement sheet and supporting documentation. On-site burn pile locations will be flagged in advance and located as described in the practice requirement sheet and/or other supporting documentation. Populations of sensitive plant species and/or habitat as identified on the practice requirement sheet and/or supporting documentation will be avoided such that burning and associated activities reduce potential impacts to identified resources. Moving and piling of slash will be done manually or mechanically stacked unless specified in the practice requirement sheet. Pushing of slash using a bulldozer blade is prohibited. Burning of piled slash will be consistent with local and state requirements such as burn permits and air quality regulations. Piling and burning may be used in conjunction with lop and scatter or other methods in order to reduce ground cover of biomass. Piling and burning is generally most applicable where standing juniper canopy cover is over 10% but under 30%.
- Piling – Juniper piles left to provide habitat values will not exceed 4' in height and will be located as flagged in the field or less in order to improve habitat quality for sagebrush steppe dependent species. Areas where sensitive plant species occur will be avoided as indicated on the practice requirement sheet and/or supporting documentation. Piling for habitat values is generally done by hand or by hand with limited equipment use in cases where equipment is already operating inside the project area.
- "Drop and Drive" – Where juniper is to be felled by chainsaw or other manual method and left in place to decompose, individual trees will be limbed to reduce the height of the felled juniper to 3' or less in order to improve habitat quality for sagebrush steppe dependent species. Whenever feasible, intact sensitive species identified on the practice requirement sheet will not be inhibited by the placement of the dropped juniper or associated slash. This approach is most applicable to situations where juniper canopy cover is less than 10%.
- Lop and Scatter – Where this approach is used, cut material is distributed in a manner which does not inhibit the release of intact sensitive species identified on the practice requirement sheet. Treatment may be mechanical or manual. This method is mainly applicable to areas where juniper canopy cover is less than 20%.

SUPPORTING PRACTICES

In order to achieve maximum treatment effects for the improvement of wildlife habitat, the following practices are required:

- Upland Wildlife Habitat Management (645)

Depending on site conditions, monitoring results and conservation plan goals, other practices which may be highly appropriate include:

- Forest Slash Treatment (384)
- Forest Stand Improvement (666)
- Forest Trails and Landings (655)
- Obstruction Removal (500)
- Prescribed Burning (338)
- Prescribed Grazing (528)
- Range Planting (550)
- Road/Trail/Landing Closure and Treatment (654)

VI. MONITORING

Monitoring will be based on the goals of the operator and/or client and purpose of this specific practice. Methodologies may vary but typical subjects of monitoring include but are not limited to:

- Plant Species Composition
- Habitat Structure

Monitoring techniques are identified by the conservation planner and implemented by the client or designated parties.

VII. MAINTENANCE

Maintenance generally consists of ongoing removal of small juniper by manual methods and in some instances, treatment of limited re-sprouting juniper.

Landings, roads and skid trails will be surveyed for undue erosion subsequent to treatment and corrective actions taken as needed to prevent hydrologic connection of non-natural drainage features.

VIII. OTHER REQUIREMENTS

The owner, operator, or other persons shall conduct all work and operations in accordance with proper safety codes for the type of equipment and operations being performed with due regard for the safety of all persons and property.

Old-Growth Juniper

Figure 1 –Old Growth versus Young Growth Western Juniper (Consult Table 1 for key differentiating factors)

Table 1. Western Juniper Growth Form* and Site Characteristics

Characteristic	Relatively Young Trees	Relatively Old Trees
Crown shape	Conical with pointed tip	Flattened, rounded, or uneven top
Branch structure	Branches become progressively smaller from bottom to top of tree	In open stands, large branches near the base
Dead wood	Little dead wood in the bole, few dead branches, little to no foliose lichen	Dead branches, bark missing, covered by a light green lichen.
Bark	Flaky, relatively thin with limited or shallow vertical furrows	Thick, fibrous with well-developed vertical furrows
Leader growth	Terminal leader growth in the upper ¼ of the tree, usually >2 in. In open stands, leader growth >2 in. from bottom to top	Leader growth in the upper ¼ of the tree usually <1 in.
Site Location	Due to broken fire cycle, younger trees have encroached upon a range of sites, including those with fair to good quality soils. Vegetation is typically dense when compared to sites where old-growth juniper typically occurs.	Tree locations protected from recurring fire due to low fuel continuity. Typical areas include ridge tops, lava spurs and other sites of low productivity such as those with very shallow and/or rocky soils.

* Growth form and morphological characteristics vary across trees and stands so usually several characteristics are required to differentiate between young and old individuals of the species.

Miller, R.F., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2007. Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions. U.S. Geological Survey Circular 1321.