



**Natural Resources Conservation Service**  
**CONSERVATION PRACTICE STANDARD**  
**GRAZING LAND MECHANICAL TREATMENT**

**CODE 548**

**(ac)**

**DEFINITION**

Modifying physical soil and/or plant conditions with mechanical treatments.

**PURPOSE**

This practice is used to accomplish one or more of the following purposes:

- Fracture compacted soil layers and improve soil permeability
- Reduce water runoff and increase infiltration
- Break up root-bound conditions and thatch to increase plant vigor
- Renovate and stimulate the plant community for greater productivity and yield

**CONDITIONS WHERE PRACTICE APPLIES**

This standard applies to pastureland, rangeland, grazed forest, and native pastures where the slopes are less than 20 percent.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Plan, design, and implement this practice to comply with all Federal, State and local regulations. The landowner must obtain any required permits. The landowner/contractor is responsible for locating buried utilities, drain tile, and other structures within the treatment area.

Design mechanical treatments to accomplish the desired objectives and address the natural resource concerns.

Limit mechanical treatments such as contour furrowing, pitting, chiseling, ripping, or subsoiling to soils and slopes where surface disturbances will not result in unacceptable levels of soil erosion. Conduct these operations on the contour to reduce the potential for erosion.

Use surface and soil disturbing mechanical treatments such as flailing, mulching, shredding, and slashing to break up thatch, tussock, or root-bound conditions to improve plant vigor. Limit the use of these practices to terrain and soil conditions that are conducive to this type of mechanical treatment.

Treatment areas must—

- Be relatively free of undesirable or noxious plants that will spread as a result of disturbance.
- Contain sufficient quantities and distribution of desirable plants to take advantage of improved growing conditions as a result of the treatment.
- Have adequate rest from grazing to ensure the desired plant response from the treatment.

- Have suitable soil moisture conditions (not too wet) at the time of treatment.

## CONSIDERATIONS

Grazing land mechanical treatment is often used in conjunction with other NRCS Conservation Practice Standards (CPSs) to improve grazing conditions. Consider Using NRCS CPSs Range Planting (Code 550), Pasture and Hay Planting (Code 512), Prescribed Grazing (Code 528), Herbaceous Weed Treatment (Code 315), and Nutrient Management (Code 590).

Soil disturbance resulting from this practice can result in an increase in noxious or invasive plants following treatment.

Increased surface roughness from the practice may make the treated area undesirable for some uses.

The use of a probe or other suitable tool can help identify compacted layers within the treatment area that may need additional treatment.

Soil disturbance from the practice may impact an animal's ability to navigate the terrain following treatment. Ensure the treatment and resulting conditions are suitable for grazing animals, or keep animals off the treated areas until conditions are suitable.

To avoid negatively impacting wet soils following a rip or chisel treatment, consider scheduling 2 or more years of seasonally-deferred grazing.

Consider appropriate treatment intensity to stimulate the plant community and ensure a desirable species response.

If the selected mechanical treatment exceeds the depth of prior ground disturbances, this activity could affect buried cultural resources.

## PLANS AND SPECIFICATIONS

Prepare plans and specifications that describe the requirements for applying the practice according to this standard. As a minimum, include—

- A map or plan view showing the land areas to be treated.
- Written specifications that describe the details and timing for applying the treatment.
- Job sheets or other detailed information specific to the treatment to be used.

## OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan for the operator. As a minimum, include—

- A schedule for periodic monitoring to ensure the desired plants and soil conditions return to the treated area.
- A grazing schedule for the treated area developed using NRCS CPS Prescribed Grazing (Code 528).
- Recommendations for maintenance activities to ensure the long-term health of the treated area.

## REFERENCES

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