



Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

CROSS WIND TRAP STRIPS

CODE 589

(ac)

DEFINITION

Herbaceous cover established in one or more strips typically perpendicular to the most erosive wind events.

PURPOSE

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

- Reduce wind erosion.
- Improve moisture management from snow deposition.
- Improve plant productivity and health.
- Reduce particulate matter emissions.

CONDITIONS WHERE PRACTICE APPLIES

Cropland where wind erosion is a resource concern.

CRITERIA

General Criteria Applicable to All Purposes

Orientation and width of trap strips

Determine the appropriate orientation and width of the trap strips by using current NRCS-approved wind erosion prediction technology. The minimum width will be:

- At least 15 feet when vegetation or stubble in the strip will normally be 1 foot or more in height during periods when wind erosion is expected to occur. Measure the effective width of strips along the prevailing wind direction during those periods when wind erosion is expected to occur.
- At least 25 feet when the effective height of the vegetation or stubble in the strip will normally be less than 1 foot during periods when wind erosion is expected to occur. Measure the effective width of strips along the prevailing wind direction during those periods when wind erosion is expected to occur.

Vegetation or stubble

Trap strips may consist of perennial or annual plants, alive or dead, that meet the following criteria:

- Adapted to site conditions.
- Erect during critical wind erosion periods.
- Living vegetation is tolerant to sediment deposition.
- Tolerant to accumulated snow deposition in places where significant snow deposition is expected.

Refer to local NRCS technical references for criteria for adapted species selection and establishment of herbaceous vegetation that will be utilized for trap strips.

Additional Criteria to Reduce Wind Erosion and Particulate Matter Emissions.

Location of trap strips

Locate trap strips established for these purposes in one of the instances as follows below:

- At the windward edge of fields.
- Immediately upwind from areas to be protected from erosion or deposition.
- In recurring patterns interspersed between erosion-susceptible strips.

Direction and width of erosion-susceptible crop strips

Measure the effective width of the cropped strips along the prevailing wind direction during those periods when wind erosion is expected to occur.

Wind erosion calculations will account for the effects of other practices in the conservation management system. Soil loss rate will meet the planned soil loss objective.

Additional Criteria to Improve Moisture Management from Snow Deposition

Location of trap strips

Establish trap strips immediately upwind of areas where snow accumulation is needed.

Direction, minimum height, and interval width

Place trap strips as perpendicular to the snow-bearing winds as possible. The minimum height of the vegetation will be 3 feet. The distance between strips (interval) will be no more than 20H (20 times the height of the vegetation in the winter months) across the area to receive the snow.

Additional Criteria to Improve Plant Productivity and Health

Location of trap strips

Establish trap strips immediately upwind from areas used for sensitive crops. Locate the strips so there is no potentially erodible area between the trap strip and the crop to be protected.

Direction and width of sensitive crop strips

Determine the width of the crop strips using current NRCS-approved wind erosion prediction technology to estimate wind erosion during specific crop stage periods.

The effective width will not exceed the width permitted by the crop tolerance to wind erosion (the maximum rate of soil blowing that crop plants can tolerate without significant damage due to abrasion, burial, or desiccation) as specified in the NRCS National Agronomy Manual (Title 190), Part 502, Table 502-1, or other accepted technical references or planned crop protection objective for the period needed for the crop protection.

CONSIDERATIONS

Wildlife may use trap strips as cover or travel corridors. Use vegetation that provides food or cover for wildlife species in the areas. Add forbs and grasses for pollinators, native bees, and for other beneficial insects. Use a diverse mix of plant species that bloom at different times throughout the year. Use vegetation that will reduce wind speeds to allow pollinators and other beneficial insects greater mobility. Refer to your State's official technical references on vegetation establishment and species selection for wildlife food and habitat.

Selection of plants for use in trap strips should favor species or varieties tolerant to herbicides used on adjacent crops or other land uses.

When plants are damaged by blowing wind or wind-borne sediment, the spacing between trap strips may need to be reduced.

Drifting snow or grazing by wildlife may reduce the trapping capability of the strips. In such cases, other NRCS Conservation Practice Standards (CPSs), including Residue and Tillage Management Reduced Till and No-Till (Codes 345 or 329), Herbaceous Wind Barriers (Code 603), Stripcropping (Code 585), or Windbreak/Shelterbelt Establishment (Code 380) may be used with trap strips to achieve the conservation objective.

PLANS AND SPECIFICATIONS

Develop plans and specifications for each field or treatment unit according to the requirements of this standard. Specifications must describe the requirements to apply this practice to achieve the intended purpose. Record the following specification components in an approved NRCS CPS Cross Wind Trap Strips (Code 589) implementation requirements document:

- Purposes of the trap strips.
- Location and orientation of trap strips.
- Width of the trap strips.
- Width of the crop interval or distance between trap strips.
- Seedbed preparation, timing, and seeding method.
- Vegetative mix and seeding rates.
- Height of vegetation to be maintained during the critical crop stage periods.
- Time of mowing and harvests.

OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan for this practice. As a minimum include the following:

- After establishment, fertilize perennial trap strips as needed to maintain plant vigor.
- Control noxious weeds.
- Manage mowing or grazing of trap strips to allow regrowth to the planned height before periods when wind erosion or crop damage is expected to occur. When feasible, schedule harvest, mowing, or other mechanical disturbance of vegetation outside of the primary nesting season for ground-nesting birds.
- Remove wind-borne sediment accumulated in trap strips and distribute over the surface of the field as determined appropriate, and reestablish trap strip if necessary.
- Reestablish or relocate trap strips as needed to maintain plant density, width, and height.
- Periodically evaluate the trap strip effectiveness to meet the planned purposes and adapt management as needed.

REFERENCES

USDA NRCS. 2011. National Agronomy Manual (Title 190), 4th Edition, Feb. Washington, D.C.
<https://directives.sc.egov.usda.gov/viewDirective.aspx?hid=29606>

USDA NRCS. Snow Survey & Water Supply Forecasting Program website:
<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/snowsurvey/>

USDA NRCS. Wind Erosion Prediction System (WEPS) website:
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/tools/weps/>

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