

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

SOIL SALINITY MANAGEMENT

(acre)
CODE 571

DEFINITION

Management of land, water, and plants to control harmful accumulations of salts on the soil surface or in the root zone on nonirrigated areas.

Scope

This standard establishes the minimum acceptable requirements for the planning, design, operation, and maintenance of interrelated practices used to remedy and control the formation of saline or sodic areas. It does not apply to saline or sodic conditions related to or induced by irrigation.

PURPOSES

Treatment of saline or sodic-affected areas on nonirrigated land to permit desired plant growth and protect surface and ground water resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all nonirrigated land where (a) human-induced soil salinity or sodicity is at or approaching a level that adversely affects land use, or (b) combinations of factors - topography, soils, geology, precipitation, and land use - indicate the future probability of such adverse effects.

CRITERIA

1. Correct the salinity problem by applying the practice(s) as part of an overall resource management system (RMS).
2. Planned actions should give first consideration to prevention rather than correction.
3. To the maximum extent practical, use vegetation to utilize soil water in the recharge areas. List plants and provide management details on the plants adapted for use in recharge and affected area. Consider factors such as water usage, salt tolerance, and erosion control characteristics.

4. When subsurface drains are needed, the configuration selected will give priority consideration to placing interceptor drains close to the recharge area to maximize the benefited area and provide a drain effluent of the best possible water quality.
5. Where applicable, improve surface drainage in the recharge area.
6. Corrective measures must comply with water quality laws and regulations. Monitoring of before and after conditions may be recommended. List the types and extent of environmental and ecological monitoring and evaluation that may be necessary.
7. Incorporate, by reference, appropriate conservation practices that constitute components of the treatment of recharge and affected areas.

CONSIDERATIONS

Test the soil water extract of the soil surface and potential root zone to determine the presence and concentration of saline or sodic substances. Refer to National Engineering Handbook, Section 16, Chapter 4, for guidance on how electrical conductivity levels affect potential yields.

Map the affected area.

Determine the relationship of the ground surface topography and the water table contours in and adjacent to the problem area. One suggested method involves installing nine (three rows of three) auger hole observation wells for water table measurements. Additional wells may be needed to adequately define the recharge area.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these

species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that during critical periods, such as spawning, eggs in gravels and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example, there should be no disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Water Quantity

1. Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and groundwater recharge.

Water Quality

1. Potential for transfer of salinity conditions to another location where surface or subsurface drains are used.
2. Effects of erosion and the movement of sediment, pathogens, and soluble and sediment-attached substances, including salts, that could be carried by runoff.

PLANS AND SPECIFICATIONS

Plans and specifications shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

OPERATION AND MAINTENANCE

The owner or operator will be responsible for operating and maintaining this practice. Planned vegetation in both the recharge and affected areas will be reestablished as needed to maintain at least 60 percent ground cover. Diversions and interceptor drains will be maintained according to these practices.