NRCS Natural Resources Conservation Service

Helping People Help the Land

Converting CRP to Cropland - Soil Salinity and Management

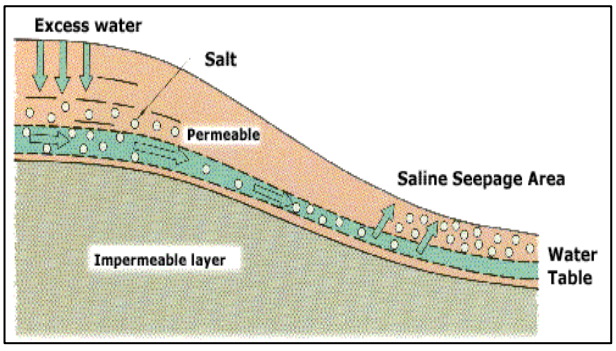
USDA Natural Resources Conservation Service - North Dakota **February 2008**

Salinity in North Dakota

Several factors contribute to the development of saline soils in North Dakota, but high water table is a major requirement. Recognizing how and why salts accumulate is the first step in production sustainability on land interspersed with saline soils. Preventing encroachment of salinity by utilizing conservation practices is an important step. When salinity levels are low, there is a slight to moderate decrease in yield, but as salinity levels rise, crop yields will be drastically reduce.

In cropland, it is common for wetlands and slow-moving natural drains to have accumulation of salts near the wetland edge. As water moves laterally away from the wetland and beneath the soil surface, salts are dissolved. This water quickly moves to the wetland edge where it evaporates from the soil surface and leaves the salts behind. This condition is also common along road ditches and field drainage ditches. Reducing evaporation at the soil surface with vegetation will control the encroachment of salinity into adjacent farmland.

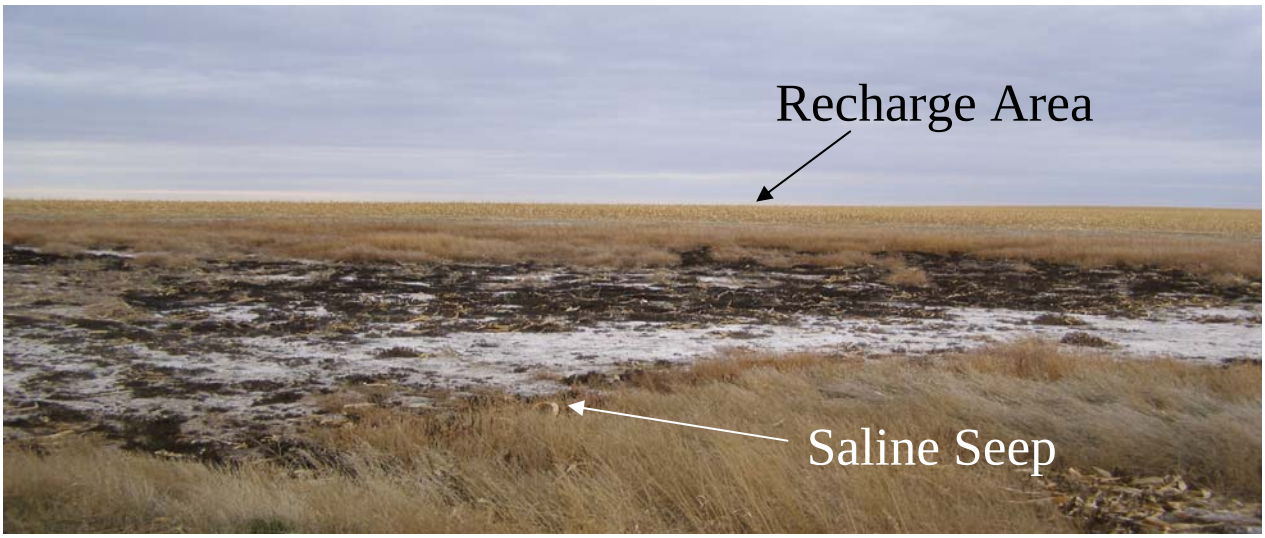
Another major salinity problem west and south of the Missouri River is **saline seeps**. Saline seeps form in landscapes where water percolates from higher elevations, reaches impermeable layer such as a clayey material or coal seams, and exits at the side or bottom of the hill. Controlling saline seeps involves intercepting water in the higher elevation, known as recharge areas, by using alfalfa or a similar deep rooted perennial.



CRP and Salinity Management

Land in CRP has been beneficial in controlling salinity. Permanent vegetation utilizes water throughout the growing season, keeping evaporation at the soil surface to a minimum. Where saline seeps occur, CRP land can utilize excess moisture in the recharge area and reclaim the seep area by seeding salt tolerant grasses. Maintaining this permanent vegetation ensures that salinity will not encroach on adjacent farmland.

CRP has other benefits relating to soil health. The permanent vegetative cover has started the process of rejuvenating soil properties that conventional tillage destroyed. Without tillage, soil structure becomes better defined, and root pores remain open. This allows for better internal drainage and aeration of the soil. Organic matter levels begin to rebuild, and soil aggregates become stable, which decreases surface crusting. Additionally, soil regains some of its natural fertility.



When weighing your options on how to best use your CRP land after the contract has expired, consider maintaining grass cover on the saline areas. Where existing CRP cover meets the requirements, minimal additional treatment is required for stand renovation and management. Maintaining the existing vegetation also permits soil quality benefits realized under CRP to remain and continue improving saline areas. With proper management of saline soils, encroachment on additional cropland acres can be reduced.

Consider re-enrolling your eligible acres of expiring CRP contract cover into either of the following CRP practices for management of saline seeps and saline soils. In many cases, the existing vegetation will likely meet CRP requirements.

CP18B – Establishment of Permanent Vegetation to Reduce Salinity
For treatment of saline seep (recharge and discharge area)

CP18C – Establishment of Permanent Salt-tolerant Vegetative Cover
For saline soils that do not meet the saline seep criteria

CRP income may not be as lucrative as recent crop production options. However, CRP can provide reliable income on soils that typically have poor productivity and generally lower yields. Lower productivity soils require similar or greater inputs as better productivity soils.

Also see NRCS Fact sheet – *Saline Cropland Treatment, Opportunities in CRP, February 2007* for more information on CP18 eligibility and guidelines.

For additional information, contact your local USDA-NRCS office.