

Wheatland Conservation Area Inc.

P.O. Box 2015, Swift Current, Saskatchewan. S9H 4M7
 Ph. # (306) 773-4775

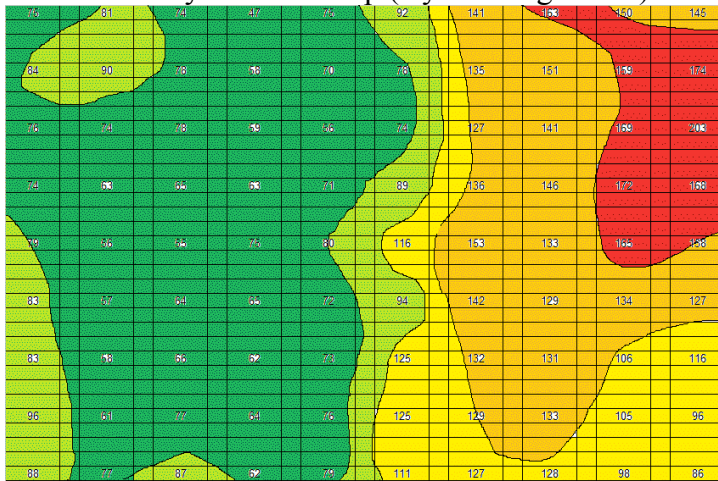
Identification and Reclamation of Saline Soil Using Perennial Forages

Saline areas are a significant concern for Saskatchewan producers and are often difficult to understand and reclaim. Remedial options are limited to seeding perennial forages into the affected area. This has occurred with mixed results because of the lack of perennial forages that are salt tolerant, the lack of proper seeding techniques, and the lack of a general overall understanding of salinity processes.

An EM38 electrical conductivity meter was used to map the study area and various perennial forages were seeded in strips down the saline gradient from the nonsaline area into and through the saline area. Forages included Rangeland Alfalfa, Smooth Brome, Commercial Saline Mix A, Rugged Alfalfa, Tall Wheatgrass, Commercial Saline Mix B, Runner Alfalfa, Algonquin Alfalfa, and Halo Alfalfa. Due to excessive spring rainfall amounts, the site was too wet to sustain machinery until the middle of July. Since it is not recommended to seed forages at this time, a fall dormant seeding operation was done.

When these forages are established in the field next season they will be providing an excellent visual demonstration of the salt tolerance of each forage and the production one can expect in a saline environment. Producers will be shown more about salinity processes, and proper seeding techniques. Soil profile pits will be dug in various nearby locations, and soils and topographic maps will be illustrated to show how the water moves and contributes to saline discharges in the field. Seeding rates, depths, and techniques will also be demonstrated. With a better knowledge of these remedial steps, producers and land managers will have a better chance to slow the spread and severity of soil salinity.

EM 38 Salinity Contour Map (Nybo Forage 2012)



EC Readings

- Dark Green < 80 (Non-Saline)
- Light Green 80-100 (Low Salinity)
- Yellow 100-130 (Low to Moderate)
- Dark Yellow 130-160 (Moderate to High)
- Red > 160 (Relatively High Salinity)

Acknowledgements

This project was funded through the Saskatchewan Ministry of Agriculture ADOPT.