Montana State Legislature

2009 Session

Exhibit: 11

This exhibit is brochure.

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Montana Historical Society Archives, 225 N. Roberts, Helena, MT 59620-1201
Phone (406) 444-4774.
Scanning by: Susie Hamilton

How Do Saline Seeps Form?

Saline seep causes a salt buildup that reduces productivity of the soil. Saline conditions also contaminate groundwater and surface water used for domestic purposes, livestock, and wildlife. Saline seep water, predominantly sodium and magnesium sulfate salts, is often nearly as salty as sea water.

Water in excess of what can be stored in the annual-crop rooting zone or used by growing crops dissolves salts in the soil and leaches down to build up a water table on top of the bedrock. The artificially created water table gradually rises until the water reaches the surface to evaporate, leaving a white crust of salts. (*See Figures 1 and 2*)

Plant growth eventually is reduced or eliminated. Saline areas spread gradually and affect thousands of acres, sometimes affecting major portions of a watershed. Salinity has taken more than 300,000 acres of cropland out of production in Montana.

Figure 1. *The water table and soluble salts in the soil profile remain stable when native range or perennial vegetation utilizes the annual precipitation.*

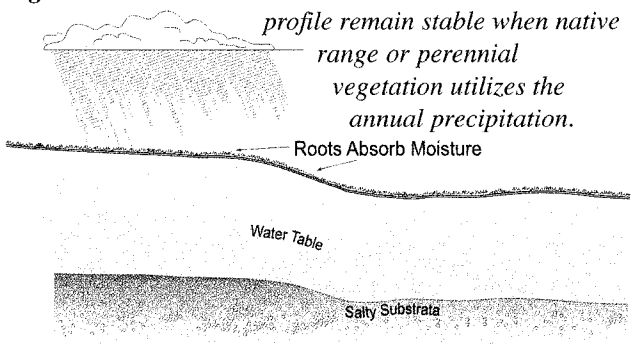
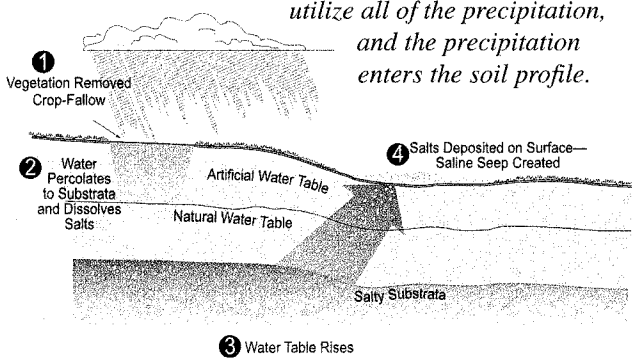


Figure 2. *Saline seeps form when vegetation does not utilize all of the precipitation, and the precipitation enters the soil profile.*



Where Do I Get Help?

Two organizations that can provide help are the Montana Salinity Control Association (MSCA) and your local conservation district. Each one will coordinate activities with the U.S. Department of Agriculture (USDA) and other agencies at your request to provide opportunities for financial and technical assistance.

The Montana Salinity Control Association provides a groundwater assessment and site-specific reclamation plan. MSCA does charge for the groundwater investigation; however, USDA cost-share is available. There is no charge for the initial site visit with the producer to see whether an in-depth investigation is needed or whether verbal recommendations are sufficient. Working with MSCA is voluntary, as is implementing any of the recommendations. MSCA can work with individual producers or small groups and on the watershed level.

Conservation districts grew from public concern for the condition of our natural resources in the early 1930s. Today, Montana's 58 conservation districts provide local citizens with an opportunity to shape resource planning in their areas. Conservation districts provide guidance to local U.S. Natural Resources Conservation Service (NRCS) personnel by defining local resource priorities, act as project sponsors and facilitators, and promote understanding of resource issues through workshops, tours, and educational outreach. MSCA is a satellite organization of Montana's conservation districts.

Montana Salinity Control Association
P.O. Box 909 • Conrad MT 59425
1-406-278-3071 • 1-800-537-6717
email: msca@3rivers.net

SALINITY CONTROL *in Montana*

EXHIBIT 11
DATE 1/12/09
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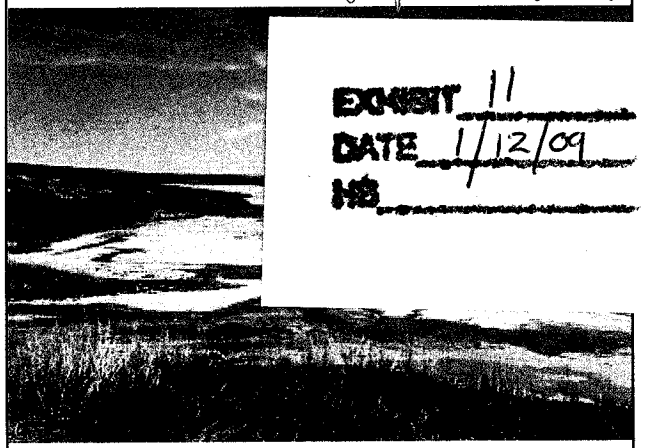

Before Photo. *A large flowing saline seep in a crop-fallow field in 1996 prior to any reclamation measures. Photo corresponds to Well 8 in Figure 6.*

After Photo. *Same saline-affected area in 2000 after the recharge area had been identified through a ground water investigation. The recharge area was rotated to a alfalfa-grass mixture and later the seep perimeter seeded to salt-tolerant grass species.*