Prairie Perfect

A Project **SAVE**
Environmental Reader Series

South Dakota Department of Environment and Natural Resources

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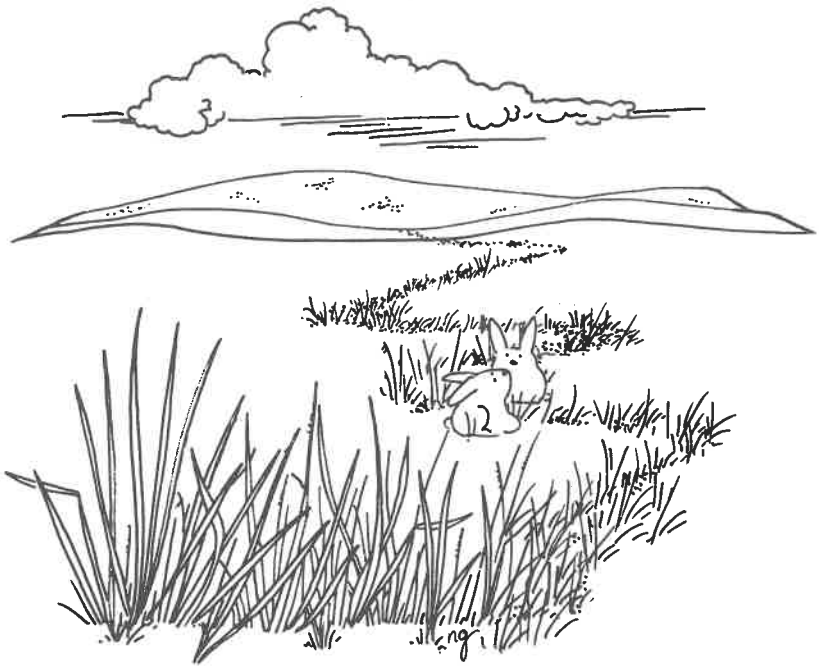


South Dakota is a prairie state. A prairie is land mostly covered by plant life called grasses. Grasses are the major plants because there is not enough moisture to support many trees except along rivers and streams. The grasses rule this land and grow in this sometimes harsh, but beautiful, environment.

Grasses protect the soil from the wind and water. These small, but mighty, plants send out roots that hold the soil in

place. Thus, the winds and rain cannot disturb the soil as easily.

If you pull up a prairie plant, you will find many roots spreading through the soil. Some prairie plant roots grow very deep into the ground. These plants send their roots as deep as five feet. Some plant roots may only be a few inches below the top of the soil.

Grasses adapt to the prairie by being small and living close to the ground. The low growth protects them from the prairie winds. Wind pulls water from a plant. Without water a plant will die.

Healthy prairie contains many grasses. When there are many of these grasses growing close together the soil will erode less. When a hard rain comes, the soil will stay in place because of the thick plant cover.

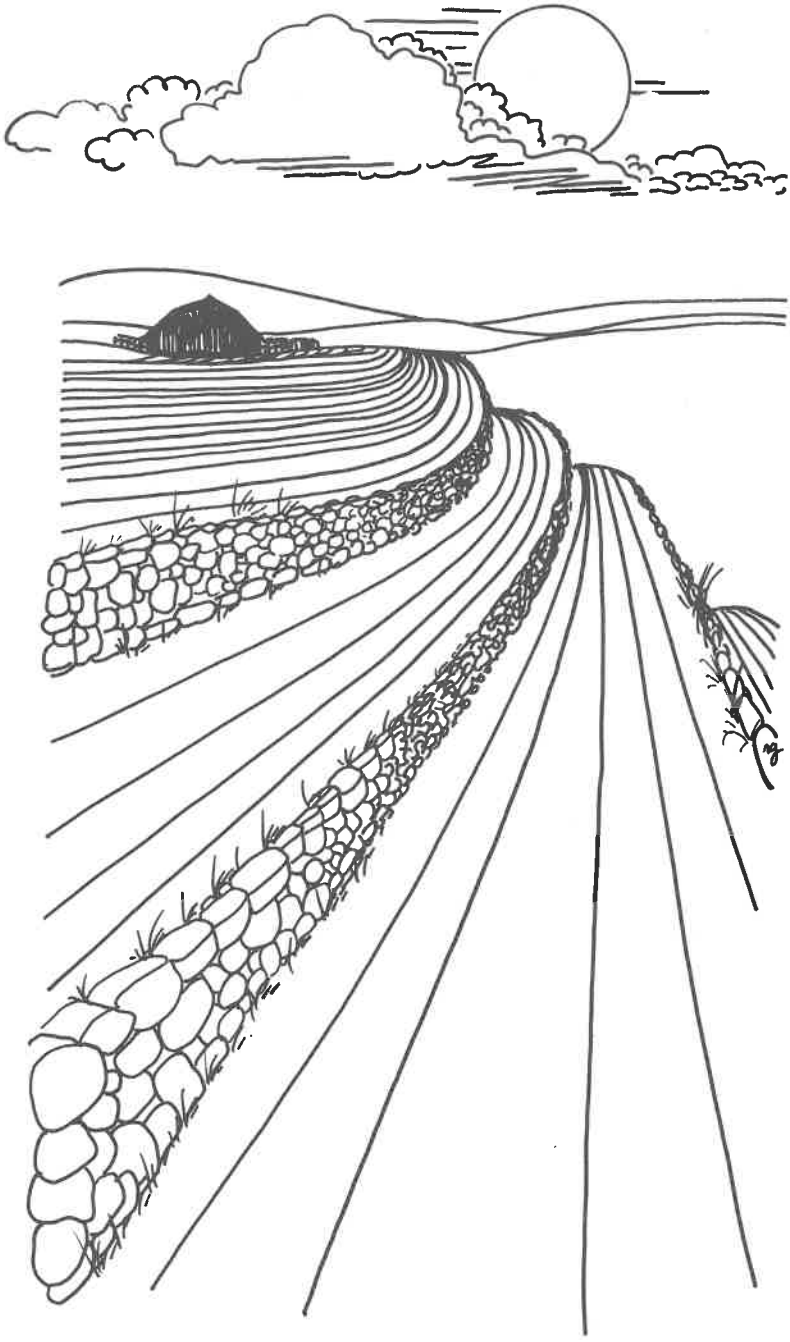
Good plant cover is important to all of us in South Dakota. When it rains hard on the prairie, the water may not soak into the soil. If the water does not soak into the soil, it will run off. Water that runs off where there is good plant cover will contain

very little soil. The runoff water will be washing over plants rather than bare soil. This clear water will enter our streams and provide fish and other wildlife with a clean place to live.

The Badlands National Park of southwest South Dakota has areas of land where grasses do not grow. When it rains on the Badlands, the soil washes into the gullies and valleys of the park. The soil has a gray-white color. This is where the White River gets its name. This river has lots of soil washed into it from the Badlands. It is the soil in the water that gives the river it's color.

After heavy rains, other rivers in the state will have a muddy color. This occurs because soil is washed off the land. The washing of soil off land is called erosion. Erosion occurs when grasses are absent or very low in number. The low numbers can be caused by too many animals or because of poor soil. Grasses may be absent because they have been plowed under to make cropland.

The prairie is dotted with farms and towns. This means there are crops like wheat, corn, sunflowers and soybeans that have replaced the natural grasses. In towns the grasslands have been replaced with streets, houses and shopping areas.



Growing crops is important to all of us. Crops provide food for us and our animals. Growing crops on steep land causes a problem. Snow melt or spring rain can wash away the soil on this steep land if it is not protected. This soil will be carried into the streams. Animals and plants cannot survive in a stream choked with soil.

How do we prevent the soil from washing into the streams and waterways? How can we have a prairie perfect? We need crops that come from our farms, so what are we to do?

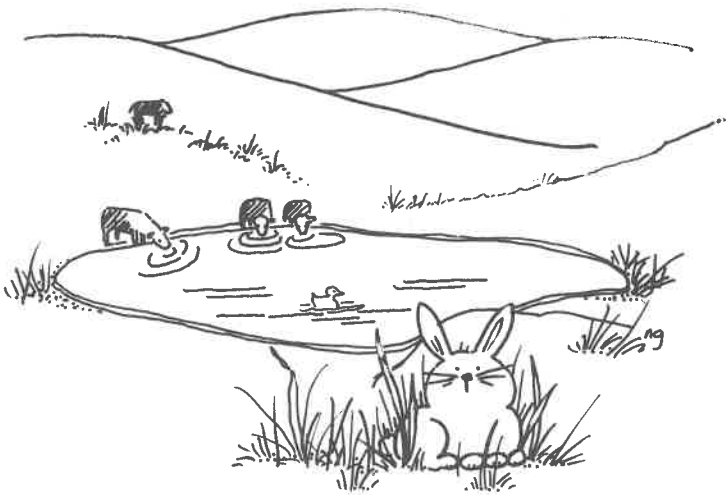
The answers are not difficult. We need to make sure we do not farm the steep land or leave our cropland bare in the winter.

Farming up and down hills causes soil erosion. Crops should be planted around the hill rather than up and down. The rows act as miniature dams and hold the water if there is not too much rain. We need to put in terraces where the land slopes. Terraces are places in fields that act like little dams. Terraces run around the hill rather than up and down it. They slow the water flow and will hold back the water. Water that is held

behind the terrace allows the soil to settle out. This soil then stays on the field rather than running into our streams.

Plant material should be left on the land in the winter. Part of the plant is left on the fields after the crops are harvested. The old stem and root of each plant on the field will protect the soil. This old plant material will decay or rot if left on the fields. These decayed plants are food for the next years crop.

Another way to protect our prairie streams is to plant grasses in the fields. The fields are planted with strips of grass that are called grassed waterways. These grassed waterways run down the hill and act as a passage for runoff water.



When water runs out of the crop rows it comes to the grassed waterway. The grass in the waterway acts like a filter and traps the soil particles. The water then leaves the field with much less soil.

Where large amounts of water run off the fields, small dams may be necessary. These little dams conserve water for the farms. They also serve to trap water that has soil in it. When the water runs into the dam, the soil settles out. Water that runs out of the dam will be much cleaner.

Some of the farm ponds are used for fishing, hunting and other recreation. Cattle use these dams for watering and cooling themselves on hot days.

People living in towns want good streets, homes and shopping! What can they do to keep our prairie perfect?

Our cities and towns have water that runs off streets and lawns. People living in communities must carefully use chemicals. These chemicals can be carried in the water

that runs off the land and winds up in our streams. Some of these chemicals hurt our plants and animals that live in the streams.

Sometimes in towns, clearing land of all plant life is done for new houses and buildings. This leaves the soil without protection. If it rains, soil moves with the water. The water flows into streets and then into storm water drains. You can find the storm drains at the bottom of hills next to the street curb. These storm drains carry water to the streams. Builders can put dams around the construction site to slow the water. When they do this the slower water allows the soil to drop out of the water. The soil that stays behind the dam can be reused on the construction site.

Our state is a wonderful place to live. We have many resources to enjoy. South Dakota has many lakes. Most natural lakes are found in the northeastern part of the state. There are man-made lakes formed by the dams on the Missouri River. Many of our lakes are very clean. They are clean because no industry or manufacturing plants put their waste into these water bodies.

Soil in runoff water is not good. This soil can fill a dam or lake if it occurs over a long time. This shortens the life of the dam or lake.

The soil particles can harm animals and plants by shutting out the sunlight and keeping air from them. Chemicals that are attached to the soil particles can be harmful to the plants and animals.

Run off water can carry nutrients. These nutrients cause water plants to grow rapidly and in large numbers. Problems occur when these plants die and decay.

So remember, prairie plants are small but mighty! They hold and cover the soil. They keep the soil in place and help filter the runoff water. This keeps our streams and lakes clean. Clean lakes and streams mean that we can have more fun on and in the water. Fun such as fishing, boating and swimming.

Please notice the plants of the prairie. These plants make our prairie perfect for you and me!

Thanks to
Pat Kuck, Soil Conservation Service,
for his valuable comments.
Thanks to
Kay Miller, for her help on the book layout.

A Project SAVE Publication

10,000 copies of this booklet were printed at a cost of .16 each.

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