

# **Range Management: Plant Succession**

Fact Sheet

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**What is it?** Progressive plant development, or replacement of one plant community by another, is an on-going, long-term process referred to as plant succession. When any of the conditions change where plants grow, the make-up of the plant community may change.

Plant succession is governed by climate. Plants dominate an area of land because they are best adapted to that soil, temperature, rainfall, elevation, exposure, and other ecological factors such as natural fires and grazing.

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**Why?** Although the potential plants on an area of rangeland are relatively stable, plants change when the environmental factors change. If the annual average temperature of a region changes only a few degrees, the plants respond with changes in composition. If the plant cover of the land is removed and soil erodes, the potential plant community also changes. When the potential plant community of an area of rangeland is destroyed by whatever manner, nature constantly strives to restore the vegetation to its original state.

Man's influence has been profound on plant communities in this country over the past few centuries. The plow, the cow, and more recently housing developments have impacted large areas of western rangeland.

Western grassland developed under grazing conditions. Large herds of bison and other animals would graze an area of grassland and then migrate to another. This provided the grazed area with a rest period. Grazing and resting cycles stimulated the grasslands and kept them productive.

Range management today is based on sound ecological principles. Continuous overgrazing of rangeland changes the potential plant community from desirable, highly productive grasses to low producing grasses and often permits invasions of moisture robbing woody plants. This change to less desirable plants is called range retrogression.

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**How?** To reverse retrogression and restore rangeland back to its productive potential, long range planning is necessary. First, determine what caused the problem. To address the problem without addressing the cause is a short-term solution that may have a long-term impact. Next, inventory the present plant community.

Careful consideration must be given in comparing the present range plants in relation to the potential plants that would grow on the soil. A plan for range improvement must be carefully considered and alternatives weighed to achieve the desired effects economically.

To return rangeland to its potential through plant succession, a grazing system must be incorporated. Various systems are explained in a related Fact Sheet, "Planned Grazing Systems." Basically, managing animals to graze plants at the proper time and to the right intensity will stimulate plant growth, especially the desirable grasses. This managed grazing, coupled with proper resting of plants, will increase the vigor of the more desirable plants and allow them to better compete with less desirable plants for sunlight, moisture, and plant nutrients. Positive plant succession will then begin to occur. The plants that are best adapted and most competitive will begin to dominate the site once again.

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## **Where to Get Help**

For more information on range management, contact the local office of the USDA Natural Resources Conservation Service.

*All programs and services are offered on a non-discriminatory basis.*