



# RANGE

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## Range, Pasture and Natural Area Weed Management

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### Quick Facts...

Weeds are managed to achieve overall land use goals and objectives.

All weed management must be applied and evaluated over an extended time to be successful.

Mapping weed infestations is the first step in pasture, rangeland, and natural area weed management.

Integrate two or more control methods into a system of management.

Control small, scattered or perimeter infestations before large, dense ones.

Keep accurate records of control procedures and evaluate for success or failure.

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Weeds are spreading rapidly on Colorado rangeland and in pastures and natural areas. Manage weeds during the current growing season to decrease or prevent future infestations. All too often, weed control during a growing season is evaluated in terms of financial return only for that season and not for future impact.

All weed management must be applied and evaluated over an extended time to be successful. This is particularly important with rangeland, pasture, or natural area weed management programs. A good manager develops a comprehensive weed management plan and incorporates that plan into a long-term land management program; i.e., weeds are managed to achieve overall land use goals and objectives.

Be persistent in weed management, particularly with perennial weeds. Most successful weed management systems require input for several growing seasons. Weed infestations occur over time and seldom can be cured in a single growing season. Soil seed dormancy of most weeds and the extensive root systems of creeping perennials requires that weed management systems in rangeland, pasture and natural areas need to be designed for input over extended time periods.

### Mapping

A comprehensive weed management plan has several key features. First, develop an accurate map of weed infestations. Include information about infestation locations and weed species within those locations. Also, indicate the type of infestation:

- scattered infestations less than 10 yards in diameter with just a few plants;
- light infestations made up of small patches up to 0.5 to 1 acre in size;
- moderate infestations from 1 to 10 acres; or
- large dense infestations greater than 10 acres.

Additionally, include the productive value of land where infestations are located to help determine how much money to spend on weed management during any year and over time. Also, determine habitat, e.g. rangeland, irrigated pasture, around ponds or along streams and rivers, and associated desirable plant species, as these will help you choose appropriate control tools.

### Integrate Control Methods

A key aspect to weed management is to integrate control methods into a management system.

- Cultural controls are methods that favor desirable plant growth, such as proper grazing management, irrigation, and seeding vigorously

growing, competitive desirable plant species.

- Mechanical control physically disrupts weed growth and includes such methods as tillage, mowing, mulching, burning and flooding.
- Chemical control is the use of herbicides.
- Biological control is the use of an organism to disrupt weed growth. Classical biological control uses natural enemies of weeds such as insects or disease organisms. Biological control also may include use of sheep, cattle, goats or other large herbivores to control weeds.

A good weed-management plan integrates two or more control measures into a management system. For example, if a pasture is infested with leafy spurge:

*A good weed-management plan integrates two or more control measures into a management system.*

1. **Biological control:** Use sheep or goats to graze the weed during the growing season to relieve desirable plants from intense weed competition.
2. **Cultural control:** Irrigate, where applicable, to further stimulate desirable plant growth to provide better competition with leafy spurge. These two procedures allow effective pasture use by other livestock, such as cattle, that normally do not graze leafy spurge.
3. **Chemical control:** In the fall, spray the infestation with Tordon 22K (picloram) to control leafy spurge.

This example integrates biological, cultural and chemical controls into a weed management system. If leafy spurge is the weed problem, you may have to repeat this program most growing seasons. With this procedure, you can still use that land and see a return on your weed management investment.

## Systematic Control Procedures

Do not attempt to control all weed infestations in a single season, except on small land parcels. The mapping procedure will indicate where dense infestations lie and where small scattered or perimeter infestations are located.

*Be systematic about weed management.*

Be systematic about weed management. Start with perimeter infestations. These are the easiest and most affordable to control. If controlled first, they can be kept from becoming large and dense. If you start with large, dense infestations, perimeter ones often get worse. This leads to frustration and a sense of futility in weed management.

A systematic approach allows for a return on the control investment during the weed management process. Ground that was lightly infested can be used for productive purposes, then some of that profit used to combat heavier infestations.

## Record Keeping and Evaluation

Keep good records of weed management. Include procedures used, dates applied, weather conditions, and growth stage and condition of weeds and desirable plants. Evaluate for success or failure. Good records and evaluation lead to successful management and fewer failures.

*Keep good records of weed management.*

Often, evaluation efforts provide the most accurate assessment one to three years after control application. This is important for perennial weeds where follow-up is a key to successful weed management. The worst mistake to make is to use a weed management system, assume it will work, and not evaluate the outcome.