



Photo: Rob Rutherford, Cal Poly State University



Photo: ASI

TARGETED GRAZING:

A natural approach to vegetation management and landscape enhancement.

TARGETED
GRAZING

VALUE FOR
LANDOWNERS

SHEEP AND
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LIVESTOCK TO THE RESCUE

More and more plants are trespassing across millions of acres. From invasive weeds to excess fire fuels, these unwanted plants are spoiling and fracturing America's landscapes. Now, a new breed of land and livestock

manager is riding to the rescue. Grazing-for-hire sheep and goat operators and managers of private and public lands are teaming up to tackle these plants. Their work is renewing and refreshing the land.

TARGETED GRAZING



Photo: Karen Launchbaugh, University of Idaho

Herders for thousands of years have harnessed sheep and goats to manipulate vegetation. However, today's vast, intricate web of human activities – roads, power lines, recreation and rural development – coupled with environmental concerns requires that land and livestock managers operate with greater care and precision. Drawing on experience and research, these progressive managers are crafting customized strategies to deal with unwanted plants. It's not grazing as usual. It's targeted grazing to manage vegetation and enhance landscapes.

Yellow starthistle has invaded 14.3 million acres of California's 101 million acres, making it the fastest-spreading, most-invasive, non-native plant in the state.



Sheep keeping leafy spurge out of their pasture.

Photo: Don Schuhart, USDA, NRCS

CREATING RECIPES FOR TARGETED GRAZING

At its simplest, targeted or prescribed grazing employs the appropriate species of livestock to cripple unwanted plants and enhance desired ones. In practice, it's not so simple. No two landscapes are alike and all landscapes are constantly changing.

Because every situation is different, there are no cookie-cutter recipes for vegetation management. Instead, land and livestock managers must combine the right ingredients to craft their own recipes to fit each situation. Effective managers consider the season, the terrain, the livestock and, most importantly, the vegetation. Bottom line: It takes know-how to do the job and to do it right.

A new publication, "Targeted Grazing: A natural approach to vegetation management and landscape enhancement," brings into focus the latest information on targeted grazing.

The handbook explores things to consider in tackling broadleaf weeds, annual grasses, brush and woody plants. It offers ideas and strategies for grazing rangelands, forests, orchards and croplands as well as for mitigating fire risks and improving wildlife habitat. Two service providers, An Peischel of Tennessee and Dick Henry of New Hampshire, share advice from their personal experiences with targeted grazing of sheep and goats. The book also provides resources where people can go for more information and it lists guidelines for grazing 21 shrubs, grasses and broadleaf plants.

THE PUBLICATION PROVIDES THE INGREDIENTS MANAGERS NEED:

- using animal behavior to improve targeted grazing;
- keeping livestock healthy for optimal vegetation control;
- understanding how plants respond to grazing;
- monitoring vegetation to achieve grazing goals; and
- grazing multiple animal species to improve landscapes.

WHY SHEEP OR GOATS?

The techniques to manage and manipulate vegetation are numerous, including herbicides, mowing, chaining and prescribed fire. These methods have their places, but they can be expensive or socially unacceptable.

In many instances, sheep and goats offer several advantages: they're natural and environmentally friendly; they're highly mobile and able to access remote areas; and they're often less expensive.

VALUE FOR LANDOWNERS

In the war against invasive species, targeted livestock grazing can be used as either the sole method or as a complement to other methods for managing vegetation. Good managers will assess the situation and integrate the tools that provide the best management solution.

IT'S NOT GRAZING AS USUAL

The traditional mindset dictates that livestock producers pay landowners for the value of feed their grazing animals harvest. When plants become a nuisance, the roles reverse. To repair landscape problems, the landowner compensates the livestock producer for the value the grazing provides.

More than 60,000 head of sheep and goats are grazing leafy spurge in Montana and North Dakota.



Photo: Suzi Taylor,
Montana State University, Missoula, Mont.



Goats munching kudzu into submission.

Photo: Jean-Marie Luginbuhl,
North Carolina State University

EXAMPLES ABOUND OF HOW SHEEP AND GOATS ARE PROVIDING VALUE FOR LANDOWNERS:

- In New Hampshire, sheep graze under power lines to prevent trees from reaching the lines and cutting service.
- Sheep in North Dakota reduce leafy spurge concentrations by 90 percent so the grass can grow for the cattle that follow.
- In the Pacific Northwest, sheep and goats have controlled invasive shrubs like gorse and multiflora rose.
- In the Intermountain region, sheep have succeeded in reducing sagebrush density.
- Goats in Arizona and California have grazed chaparral to reduce fire risk created by volatile brush species.
- In Oregon forest plantations, sheep grazed down shrubs and grass with virtually no damage to adjacent Douglas firs.
- In California vineyards, sheep have grazed down competing vegetation on the vineyard floors.
- Grazing sheep have suppressed crop-damaging insects in Montana wheat and alfalfa while trimming back weeds and fertilizing fields.
- Sheep are maintaining a firebreak three miles long and 200 feet wide between luxury homes in Carson City, Nevada, and the Toiyabe National Forest.
- The city of Tallahassee, Florida, hires the services of 1,200 sheep to control kudzu on 200 acres in city parks.
- Goats in a western North Carolina apple orchard controlled herbaceous weeds, increasing desirable grass and legumes to 63 percent of the vegetation from 16 percent.

THE ELUSIVE SILVER BULLET

Because vegetation regenerates itself, subduing unwanted species and promoting desirable ones is a continuous process. Success won't happen overnight or even in a single year. It may take several years before unwanted vegetation is wrestled into submission. Land and livestock managers who embark on a targeted grazing

project should adopt an attitude of persistence and tenacity. It takes good management and hard work, but successes are spreading across the land. As a sustainable approach that can be integrated with other methods of managing vegetation, targeted grazing can provide long-term solutions to vegetation problems.

GRAZING OPPORTUNITIES

The handbook on targeted grazing has been crafted by more than 30 researchers and practitioners to provide the latest information on the wide-ranging opportunities for managing vegetation and enhancing landscapes with livestock.

THINGS TO CONSIDER IN TARGETED GRAZING:

Species of livestock – Each species has different grazing preferences that can be used to change vegetative composition. Basically, sheep prefer weeds, goats prefer shrubs and cattle prefer grass.

Animal behavior – Animals learn from the consequences of their behavior, both positive and negative, and from their mothers and peers. Understanding animal behavior is a powerful tool that can help managers modify diet selection to increase the effectiveness of animals used to manage vegetation.

Animal husbandry – Many of the practices used in traditional grazing are applied in targeted grazing projects. However, because there is a need for greater refinement and precision, targeted grazing often requires increased management, transportation, monitoring, fencing, guardian animals and more.

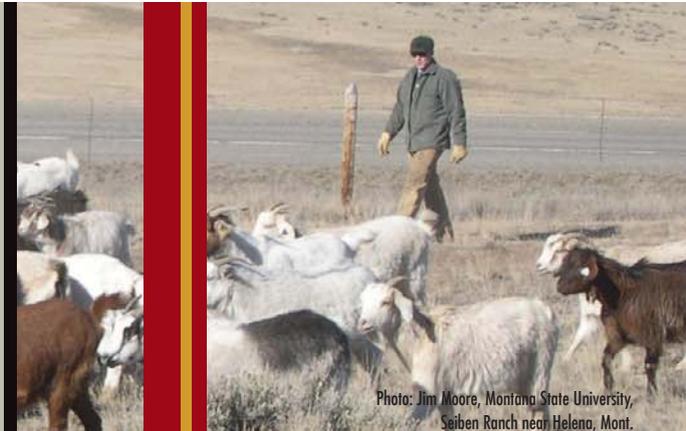
Plant response – Grazing is a natural process that has influenced the evolution of plants for millennia. Understanding which plants are likely to be grazed and anticipating the competitive interactions among plants, forms the basis for developing targeted grazing strategies.

Monitoring – Assessing vegetative change is an essential part of evaluating the progress of targeted grazing. Monitoring can help livestock and land managers impartially assess the costs and benefits of grazing so that successes can be replicated.

Multi-species grazing – Grazing two or more species of animals, either at the same time or in sequence, on the same piece of ground can increase grazing and carrying capacity, reduce the incidence of parasites in sheep and goats, improve cash flow and reduce financial risk.



Herders are utilized in targeted grazing to monitor livestock that graze invasive plants.



TYPES OF VEGETATION:

Annual grasses – Several annual grasses are devastating rangelands. While some provide valuable forage, grasses like cheatgrass and medusahead crowd out perennial grasses and create fine fuels that promote more frequent wildfires. Domestic sheep are well suited to suppress these troublesome grasses.

Herbaceous broadleaf weeds – Many of these weeds were brought from Eurasia to North America, where they have no natural enemies to thwart their spread. When grazed at the right stage of growth, these weeds provide nutritious forage to sheep and goats, which, in turn, help in the weeds' control.

Brush and woody shrubs – Goats are particularly well suited for managing woody plants. Their mouths and tongues can remove leaves and small stems and their digestive tracts are well adapted for detoxifying toxic compounds like tannins and terpenes.

WHERE TO APPLY TARGETED GRAZING:

Silviculture – In natural forests and commercial tree plantations, targeted grazing can be used to manage ground vegetation that competes with trees for water and nutrients. It can also reduce vegetative fuels in fire-suppressed forests to mitigate the effects of destructive wildfires.

Orchards and vineyards – Grazing to manage vegetation between trees and vines has become more common in recent decades and is now practiced in nearly every state where fruits, nuts and wine grapes are produced, especially in orchards and vineyards under organic production.

Fire suppression – Grazing on grasslands and forests and browsing on shrublands can reduce fire-fuel loads and create firebreaks and green strips. It can be especially effective when combined with prescribed fire.

Wildlife habitat – Targeted grazing to improve wildlife habitat has been promoted for decades, but few managers have applied it. Sheep and goats can be used to manipulate and improve species' composition, yield, accessibility, nutritive quality, cover, structure and diversity in ways that favor wildlife.

Crops – Incorporating sheep grazing into hay and dryland grain production not only has the potential to increase yields, fertilize fields and suppress weeds and insects, it can also reduce costs, offer new business opportunities and enhance rural development.

According to Cornell University's College of Agriculture and Life Sciences, non-native weeds have invaded 40 percent to 50 percent of America's croplands, pasturelands and public lands. And they just keep spreading at a rate of 1.75 million acres per year, causing \$50 billion annually in environmental and agricultural damage.

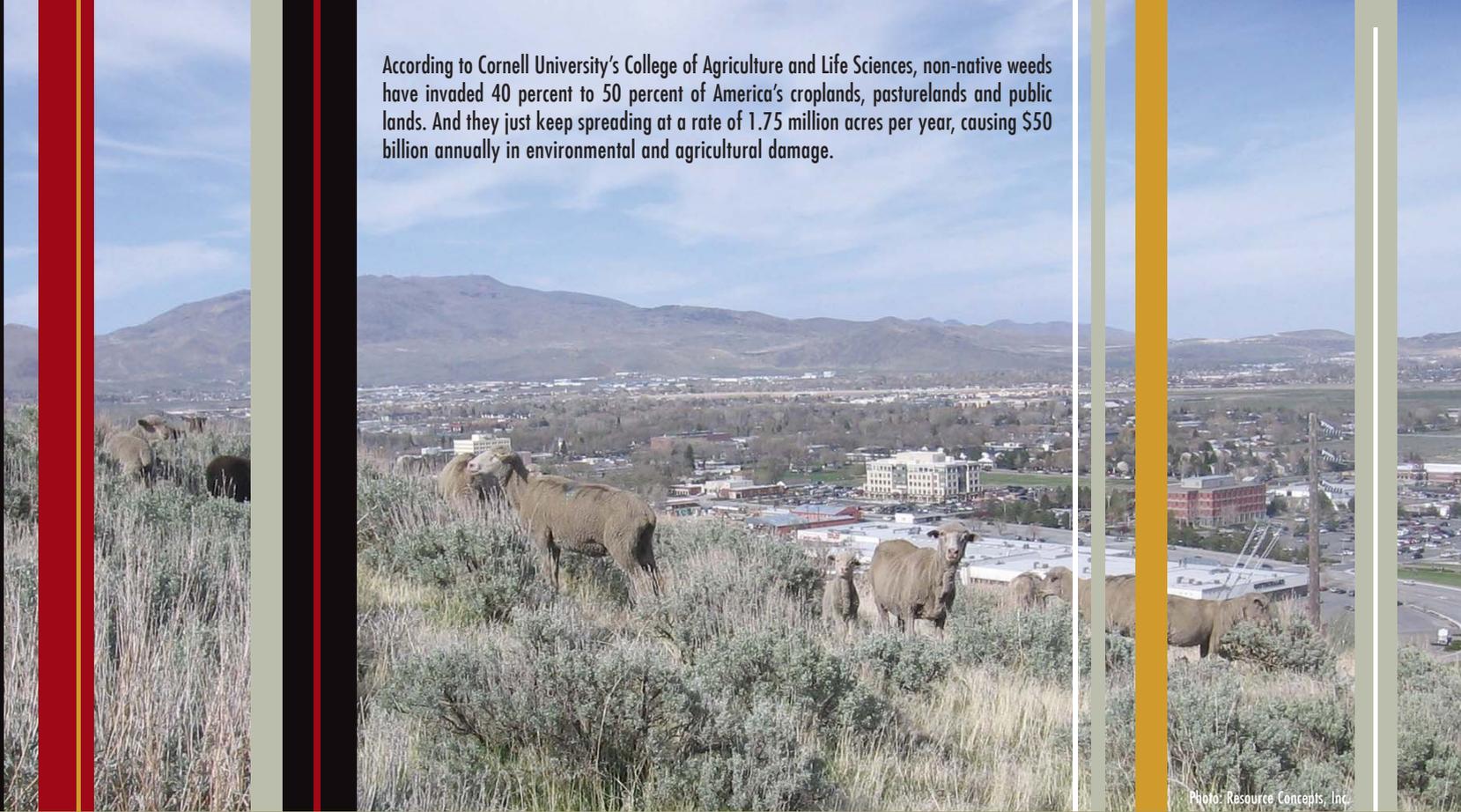


Photo: Resource Concepts, Inc.

WANT TO KNOW MORE?

The handbook, "Targeted Grazing: A natural approach to vegetation management and landscape enhancement," is available in hard copy, CD and on the Internet.

To order a copy, contact:

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This project is a joint effort of the American Sheep Industry Association, the American Land and Resources Foundation, the National Sheep Industry Improvement Center and the Joe Skeen Institute for Rangeland Restoration.

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