The Art and Science of Targeted Grazing

USING SHEEP AND GOATS TO CONTROL RANGELAND AND AGRICULTURAL WEEDS

PRESENTED BY DAN MACON

Overview

What is Targeted Grazing?

The Science: understanding plant growth and animal behavior

The Art: using targeted grazing to control weeds like medusahead

Monitoring

Case Studies

Targeted Grazing Defined

From the Targeted Grazing Handbook:

"Targeted Grazing is the application of a specific kind of livestock at a determined season, duration, frequency and intensity to accomplish defined vegetation or landscape goals."

For medusahead, what are our goals?

Species and Class of Livestock

Cattle, sheep and goats have different (but overlapping) forage preferences.

Nutritional demands may be different for specific classes of animals (growing heifers vs. mature cows, feeder lambs vs. dry ewes, etc.).

Consider the reproductive cycle – small ruminants provide greater flexibility.

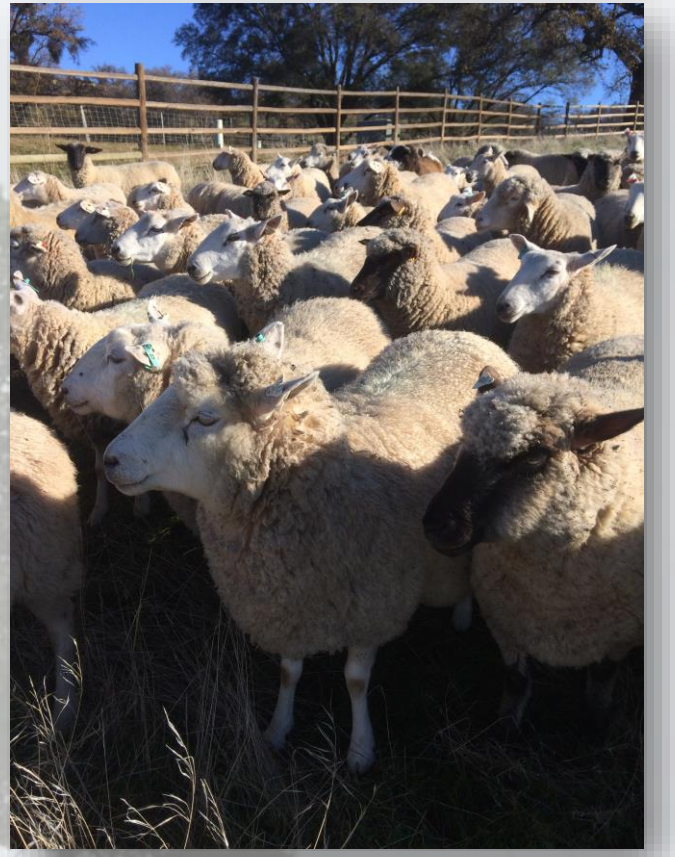
Season, Duration, Frequency, Intensity

Season: consider plant growth stage, animal production stage, etc.

Duration: do you want the animals to get a second bite?

Frequency: are you trying to stress the plant while it's growing to reduce seed production?

Intensity: how will you manage against forage selectivity? Stock density is one measure of management intensity.



The science…

Grazing Behavior and Animal Impacts

1. Grazing – when is the target species palatable and nutritious?
2. Trampling – can break up thatch and facilitate carbon breakdown (which can build soil organic matter!)
3. Deposition of Manure and Urine – can help manage nutrient cycles.

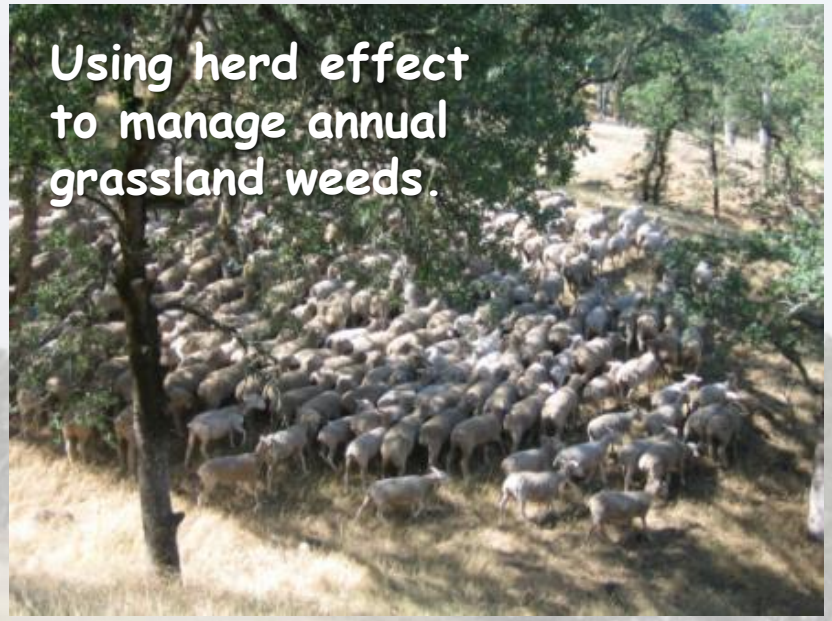
The science…

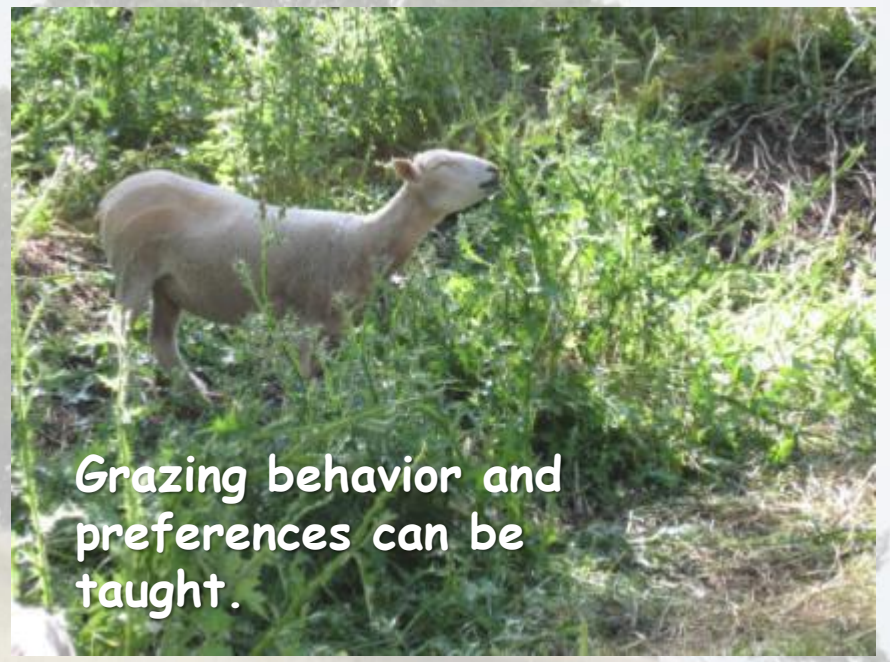
Using BEHAVE principles helps train our vegetation management specialists (aka, the animals). https://extension.usu.edu/behave/

Spatial memory is important – the animals remember the landscape.

Feed the rumen microbes!

The science…


Using herd effect to manage annual grassland weeds.


Grazing behavior and preferences can be taught.


Animals can handle small amounts of toxic plants if there is other forage available.

The art…

From a producer's perspective, what business are you in?

- Critical to balance animal performance with weed control goals
- There are classes of animals even in our small operation better suited to targeted grazing projects
  - For example, we've used yearling ewes, yearling goat kids and dry does and ewes
- Is this a stand-alone business, an on-ranch enterprise, or a combination of the two?

The art…

Goals, objectives and expectations

- Long term suppression vs. immediate eradication
- Aesthetic appearance
- Livestock performance
- Target size – landscape vs. site
- These aren’t always clear!

The art…

Exposing young animals to a variety of vegetation *while they are nursing* seems to help create a flock or herd with widely varied dietary preferences.


Sheep will eat blackberries!


Fenceline shot – 100 ewes on starthistle.

The art…

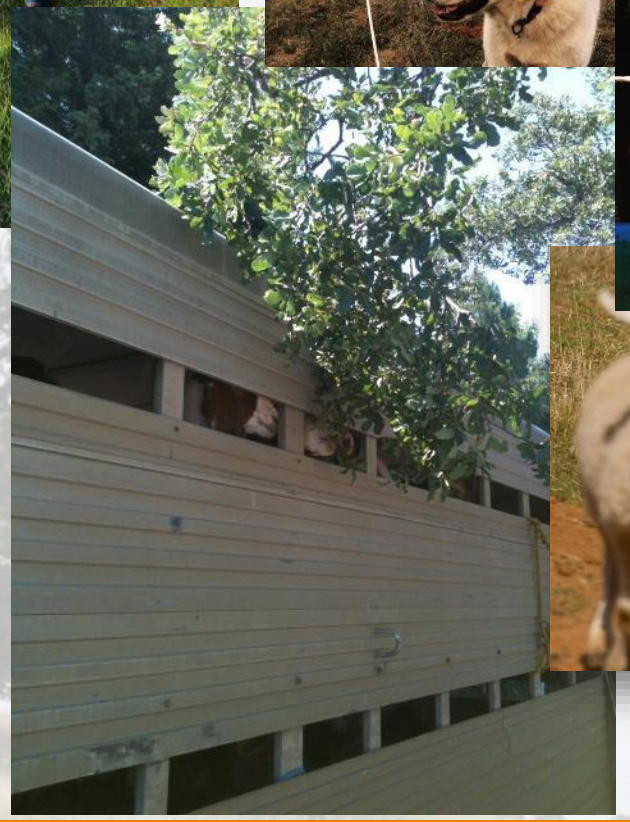
Stockmanship skills are critical!

- Loading and unloading with minimal infrastructure.
- Herding vs. hauling generally reduces cost.
- Herd-effect can be a useful tool!
- Working with animal behavior – and understanding how behaviors between species might differ.

The art…

Infrastructure needs

- Fencing
- Stockwater equipment
- Transportation equipment
- Predator control
- SKILLS
  - Business management
  - Range management
  - Public relations (more on this later)



The art…

Economics and Logistics

- Not necessarily the low cost option
- Works best where spraying, mechanical treatment or prescribed fire are too costly and/or difficult to use
- Effects can be subtle than other treatments (like spraying, for example)
- Operators must know where animals will be before and after the “project” – you don’t put them in storage!

The art…

Control versus suppression

- Grazing, in most cases, will suppress (rather than eliminate) invasive weeds.
- Some annual weeds require multi-year treatment before the seedbank is depleted

Some targeted grazing projects require “over-grazing on purpose” – time and timing are critical!

Risks

The risks depend on the type and location of project, but may include:

- Vandalism
- Toxic plants and other toxicity issues.
- Wildfire
- Predation
- Loss of animal condition/performance
- Property damage
- Spread of weed seeds

My observations on grazing medusahead

Most livestock will eat it (and may even select for it) during the growing season.

Nothing likes it once it's past the boot stage.

Dry and early-gestation ewes will eat dry medusahead if they have a protein supplement available.

Fall grazing and trampling can help break up thatch and seems to give other grasses a chance to get established.

I have successfully suppressed medusahead in rangeland settings. I'm not sure I've ever eradicated it.

Conclusion

Targeted grazing can be a useful tool for suppressing rangeland weeds like medusahead

Successful targeted grazing projects require knowledge about grazing systems and impacts, and animal behavior

Time, timing and class/type of livestock are critical considerations for these types of projects.

CWGA Targeted Grazing Field Tour

Wednesday, May 24, 2017

Lake County

www.woolgrowers.org

References

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