Managing Grazing for Sustainable Pastures

Rationale

This lesson focuses on grazing management. Effective grazing management increases forage production and grazing capacity, saves money, reduces erosion, and improves water quality. It will become increasingly important to demonstrate good grazing management practices for water quality protection in the future, as the government scrutinizes nonpoint sources of pollution.

Objectives

Participants will:

1. Understand the benefits of grazing management.
2. Review how grass grows and the steps to effective grazing management.
3. Estimate available forage using a pasture stick or the Animal Days per Acre or Animal Units per Month methods.
4. Learn to monitor behind, ahead, and where of their stock.
5. Understand the basics of several grazing systems and pasture configurations.
6. Apply grazing tips to their land.

Managing Grazing for Sustainable Pastures – Lesson Plan

Time	Section	Goal	Activity	Instructor
15 min	Introduction	Answer any questions and address any concerns from the last lesson. Review lessons to date. Clearly delineate what will be covered.	Agenda • Benefits of implementing grazing management • Steps to effective grazing management • Estimating available feed and forage • Monitoring your land by making footprints • Grazing systems and pasture configurations • Grazing schedules and record keeping	Depending on number of repeat participants and time between this and the last lesson, an icebreaker may be needed. PowerPoint slides 1–2
10 min	Benefits of grazing management	Describe benefits that can be achieved via managed grazing.	Familiarize participants with some of the potential benefits associated with developing grazing systems for their properties.	PowerPoint slides 3-7
15 min	How grass grows and steps to effective grazing management	Participants will understand that they must manage their grass crop by appropriate grazing and rest periods.	• Graze to the desired stubble height (take half, leave half) • Allow adequate rest periods for grass regrowth • Don't regraze a pasture until your key species has reached the desired height	PowerPoint slides 8-16
30 min	Forage quantity	Teach participants to apply one of the methods to determine forage quantity: • carrying capacity • Animal Days per Acre • Animal Unit Months	Select one of the methods that is best suited to the needs and abilities of your participants: • Define terms • Explain method • Work through sample problems • Have participants complete one of the activity sheets Improving carrying capacity	Determining Carrying Capacity Activity Sheet Stocking Rate Exercise Activity Sheet Feed and Forage Balance Activity Sheet PowerPoint slides 17-35
15 min	Monitoring forage	Teach participants to monitor grazing for success.	Use the "footprints" analogy. Participants should learn to: • Look behind – to determine rest periods • Look ahead – to see if rest period was adequate • Look where the stock are – to determine appropriate stocking rates • Learn to adjust pasture size	Please customize to local conditions. Stubble Height and Regrowth Recommendations Information Sheet PowerPoint slides 36-58
15 min	BREAK	BREAK	BREAK	BREAK

Managing Grazing for Sustainable Pastures – Lesson Plan (continued)

Time	Section	Goal	Activity	Instructor
15 min	Options for improving grazing	Help participants consider all options for improving grazing management.	Options: Create more pastures Create exercise runs and/or paddocks	Guidelines for Exercise Runs and Paddocks Information Sheet PowerPoint slides 59-63
15 min	Grazing systems	Describe several common grazing systems and their applications.	Go through several grazing systems, discussing their pros and cons if applicable. • Season-long grazing • Partial-season grazing • Rotational grazing • Rapid rotation • Cell grazing	Customize to local conditions. PowerPoint slides 64-71
15 min	Sample pasture configurations and property improvements	Demonstrate several ways to configure pastures and improve land management.	Ask participants to make a sketch on their existing map to show how they might reconfigure their pastures to improve grazing management. A final map showing all improvements should be completed.	PowerPoint slides 72-75
15 min	Grazing schedules	Outline methods of record keeping and grazing schedules.	Discuss grazing schedules, record keeping, and tips for improved grazing management. Ask participants to fill out the Grazing Planning and Monitoring Activity Sheet Explain the use of the Grazing Dates Activity Sheet	Grazing Planning and Monitoring Activity Sheet Grazing Dates Activity Sheet PowerPoint slides 76-79
20 min	Question and answer	Answer any questions. Assign homework.	Answer any questions Assign homework: • Walk your pastures and determine if they're overgrazed, underutilized, etc. • Take photos • Estimate the carrying capacity • Design a grazing management plan for your property • Bring in weed samples for the next lesson	Lesson summary Review weed sample collection instructions on slide 80 PowerPoint slide 80
	Optional calculating AUMs exercise			PowerPoint slides 81-92

Managing Grazing for Sustainable Pastures

Materials/supplies to be requested from participants before class starts

1. Maps they have made of their properties
2. Notebook with forms and exercises completed to date
3. Calculator, paper, writing utensils, rulers

Materials/supplies needed for class

1. Flip chart and markers (or dry-erase board, chalkboard or overhead projector)
2. Overhead or PowerPoint computer projection system
3. Pointer
4. Refreshments

Local resources needed for class

1. Any local examples of improved grazing management would be very helpful.

Background Information for instructors

Grazing system suggestions provided from local sources, such as Cooperative Extension, NRCS, Conservation Districts, etc.

Beetz, A., 2004, Rotational Grazing, ATTRA Livestock Systems Guide, http://www.attra.ncat.org/attra-pub/PDF/rotgraze.pdf

Iowa State University Extension, 1999, How Pasture Plants Grow, http://www.extension.iastate.edu/Publications/PM1791.pdf

Iowa State University Extension, 1998, Guide for Year-Round Forage Supply, http://www.extension.iastate.edu/Publications/PM1771.pdf

Morrow, R., revised by Beetz, A., 2005, Paddock Design, Fencing and Water Systems for Controlled Grazing, ATTRA, http://www.attra.ncat.org/attra-pub/PDF/paddock.pdf

Pratt, D.W., 1993, Principles of Controlled Grazing, University of California Cooperative Extension Livestock & Range Report No. 932, Spring 1993, http://www.mbforagecouncil.mb.ca/CustomBlox/Files/Live/Blox/655/8.35A_UCalif_principles_of_controld_grazing.pdf

Pratt, D.W., 1996, Footprints: Deciding When to Make Your Move, University of California Cooperative Extension Livestock & Range Report No. 962, Summer 1996, http://www.mbforagecouncil.mb.ca/CustomBlox/Files/Live/Blox/657/8.45A_UCalif_when_to_move.pdf

Managing Grazing for Sustainable Pastures

Handouts needed for participants

1. Determining Carrying Capacity Activity Sheet
2. Stocking Rate Exercise Activity Sheet
3. Feed and Forage Balance Activity Sheet
4. Stubble Height and Regrowth Recommendations Information Sheet
5. Guidelines for Exercise Runs and Paddocks Information Sheet
6. Grazing Planning and Monitoring Activity Sheet
7. Grazing Dates Activity Sheet

Handouts needed for participants (in addition to lesson handouts)

1. Iowa State University Extension, 1999, How Pasture Plants Grow, http://www.extension.iastate.edu/Publications/PM1791.pdf

2. Iowa State University Extension, 1998, Guide for Year-Round Forage Supply, http://www.extension.iastate.edu/Publications/PM1771.pdf

Web sites for further information

Colorado State University Cooperative Extension Small Acreage Management, http://www.ext.colostate.edu/sam/

Cornell University Forage – Livestock Systems, http://www.css.cornell.edu/forage/forage.html

Forage Information Systems, http://forages.oregonstate.edu/index.cfm

Kansas State University Forage Web Site, http://www.oznet.ksu.edu/pr_forage/

Modern Forage Systems, Inc., http://www.modernforage.com/

Montana State University Extension Publications, http://www.montana.edu/wwwpub/expubs.html

University of Nebraska, Lincoln, Institute of Agriculture and Natural Resources, Center for Grassland Studies, http://www.grassland.unl.edu/index.htm

University of Nevada Cooperative Extension Small Ranch Manual, http://www.unce.unr.edu/publications/files/ag/other/eb9502.pdf

Determining Carrying Capacity Activity Sheet, page 1 of 3

Carrying capacity is the number of animals that a paddock or cell can accommodate without overgrazing. Simply put, the carrying capacity is how much grass you have. Determining carrying capacity helps you determine the number of months your pastures can provide forage for your livestock or how many animals your pasture(s) can support.

It's important to recognize that grazing animals only need to eat 2.5 to 3 percent of their body weight each day. A 1,100-pound horse will eat 27.5 pounds of air-dry forage (hay) a day, or 825 pounds per month.

Remember that horses damage or trample another 25 percent of the forage in a pasture, so we have to add 25 percent, making the total available forage requirement for an 1,100-pound horse a little over 1,000 pounds per month. Horses will eat more than needed if given continuous access to pasture grasses.

Remember from the forage yield calculations done in Lesson 1 of this module, useable forage in a pasture in reasonable good condition is 35 percent of the total forage. Useable forage in a "native" pasture or rangeland is 25 percent of the total forage.

Sample carrying capacity problems

Pasture 1 consists of introduced plant species. It is in reasonably good condition and produces a total of 4,893 pounds of useable forage per growing season. Pasture 1 is 3 acres in size.

Pasture 2 consists of native pasture or rangeland. It is also 3 acres in size. It produces 3,495 pounds of useable forage per growing season

Problem 1: Estimate the approximate number of months one horse can graze on Pasture 1.

Problem 2: Estimate the approximate number of months one horse can graze on Pasture 2.

Problem 3: Estimate the approximate number of months three horses can graze on Pasture 1.

Problem 4: Estimate the approximate number of months three horses can graze on Pasture 2.

Determining Carrying Capacity Activity Sheet, page 2 of 3

Pasture 3 consists of 10 acres of introduced grasses and is not subdivided with fences. Representative areas were clipped and an average forage yield of 850 pounds per acre was calculated. Two (2) horses graze on this property from May 1 to September 1.

Problem 5a: What is the total production for the 10 acres?

Problem 5b: What is the useable forage after harvest efficiency?

Problem 5c: How many months of grazing are available for one horse?

Problem 5d: How many months of grazing are available for two horses?

Problem 5e: Is this pasture overgrazed? In other words, are the key species grazed too short, or are plants regrazed before desired regrowth has occurred? When this happens repeatedly, plants die, bare ground results, and weeds invade.

Determining Carrying Capacity Activity Sheet Answer Key, page 3 of 3

Note: Calculations are based on calculations from the "Determining Forage Yield" activity.

Problem 1:

4,893 pounds of forage divided by 1,000 pounds per month forage requirement = 5 months

Pasture 1 can provide five months of forage for one horse to graze.

Problem 2:

3,495 pounds of forage divided by 1,000 pounds per month forage requirement = 3.5 months

Pasture 2 can provide three and a half months of forage for one horse to graze.

Problem 3:

Three horses, each requiring 1,000 pounds per month, brings the monthly forage requirement to 3000 pounds.

4,893 pounds of forage divided by 3,000 pounds per month forage requirement = 1.6 months

Problem 4:

3,495 lb of forage divided by 3,000 pounds per month (forage requirement for 3 horses) = 1 month

Problem 5a:

850 pounds per acre multiplied by 10 acres = 8,500 pounds of total forage

Problem 5b:

8,500 pounds of total forage multiplied by 35 percent (0.35) useable forage = 2,975 pounds of useable forage

Problem 5c:

2,975 pounds of usable forage divided by 1,000 pounds per month needed for one horse = 3 months of grazing

Problem 5d:

2,975 pounds of usable forage divided by 2,000 pounds per month needed for two horses = 1.5 months

Problem 5e:

No simple answer. If the owners are regulating the number of hours a day the horses are grazing, the pastures will not be overgrazed. If the horses have access to the pastures 24 hours a day, seven days a week, then it is probably overgrazed.

Stocking Rate Exercise Activity Sheet, page 1 of 2

First, pace off or measure an area that you think has enough forage to feed one animal for one day. Try to keep your paces one yard in length. If using a tape measure, also measure in yards. If you're not sure how large to make the area, use temporary fencing and do some experimentation. Four people, one standing at each corner, can make the task of estimating the area easier. Have the helpers take a step in or out until the area appears to be the right size. If you make your time period equal to one day, the calculations are simpler.

Multiply length (yards) _____ x width (yards) _____ =

_____ Area (square yards)/Animal Day

Calculate stock days per acre:

4,840 square yards per acre divided by _____Area/Animal Day =

_____Stock Days/Acre (SDA)

Next multiply the SDA_____ x the total number of acres_____ =

_____Stock Days

The number of Stock Days_____ divided by the total number of animals_____ =

_____the number of days you can graze prior to resting the forage to allow regrowth.

Try an example:

You have a total of 5 acres of pasture and four horses. You've picked a time period of one day, and your area is 25 yards on each size. The total area then is 25 x 25 = 625 square yards for one animal for one day.

Next, divide 4,840 square yards per acre by 625 square yards per animal day to get 7.7 SDA.

As you have a total of 5 acres, 7.7 SDA x 5 acres = 38 stock days.

38 stock days divided by a total of four horses means you can graze for 9.6 days on the five acres.

Remember, you need to continually monitor for the condition of the grass to verify your estimate is correct. It will take some practice to become accurate.

Stocking Rate Exercise Activity Sheet, page 2 of 2

Management Tip: Divide your 5 acres into 1-acre pastures and only graze four to six hours a day to increase your number of grazing days.

What should you do with your horses after 10 days? If you only have 5 acres, then you should never let your horse or horses out 24 hours a day, seven days a week if you want to graze through the growing season. Instead, measure off an area and use the time frame of four to six hours rather than a full 24 hours. This would then represent the full amount the horse would consume on a daily basis when restricted to six hours of grazing per day. If you want to graze several horses on five acres and maintain your pastures in good condition, you will need to manage more intensively than those who have fewer animals or more acres of pasture.

Feed and Forage Balance Activity Sheet, page 1 of 3

Using the tables and worksheet below, compare your land's production with your animal feed and forage requirements.

Please note that FEED is defined here as the hay you provide for your animals, either through growing it yourself or purchasing it. This is the feed you provide during the winter, between pasture regrowth period, etc.

FORAGE is defined as the growing plant material an animal grazes on. It is generally measured in Animal Unit Months (AUMs). One AUM is equivalent to the amount of forage consumed by one 1,000-pound animal in one month. This is equivalent to about 800 pounds of feed a month, or 27 pounds per day. Another way of looking at it is that animals consume 2.5 to 3 percent of their body weight per day.

If you do not have clipping data, the pasture production sheets for high, moderate and low production, based on management practices, may assist in categorizing your field condition; they are located in Lesson 1 of this Module.

LAND PRODUCTION: What is your present annual hay and pasture production?						
Is your land irrigated?	**Feed** = hay (tons per acre) Feed is hay you provide for an animal.			**Forage** (AUMs per acre) Forage is what an animal consumes by grazing.		
	FIELD CONDITION			**FIELD CONDITION**		
	Poor	**Fair**	**Good**	**Poor**	**Fair**	**Good**
YES	<2	2 to 3	3 to 6	<4	4 to 7	7 to 9
NO	<0.75	0.75 to 1.5	1.5 to 2	<1	1 to 2	2 to 3

LAND PRODUCTION CALCULATION					
Acres of Hay	**Tons of feed per acre**	**Total feed production**	**Acres of pasture**	**AUMs of forage per acre**	**Total forage production**
_____ Acres X _____ Tons/Acre = _____ Tons			_____ Acres X _____ Tons/Acre = _____ Tons		

The above numbers are the amount of feed or forage your land is now producing. Balance this against the feed and forage requirements of the animals you now possess.

Feed and Forage Balance Activity Sheet, page 2 of 3

ANIMAL REQUIREMENTS: How much feed/forage do your animals need each year?								
Animal	FEED: (hay) tons				**FORAGE: (pasture) AUMs of grazing**			
	Tons per animal per month	**Number of animals**	**Number of months**	**Total tons required**	**AUMs per animal per month**	**Number of animals**	**Number of months**	**Total AUMs required**
Cow	0.40	X _____	X _____	= _____	1.00*	X _____	X _____	= _____
Horse	0.50	X _____	X _____	= _____	1.20	X _____	X _____	= _____
Sheep	0.10	X _____	X _____	= _____	0.20	X _____	X _____	= _____
Llama	0.15	X _____	X _____	= _____	0.30	X _____	X _____	= _____
Goat	0.10	X _____	X _____	= _____	0.20	X _____	X _____	= _____

SO, does your production exceed your requirements? Congratulations!

Do your requirements exceed your production? Well, don't despair – you're in good company!

If your requirements exceed your production, you have these options:

1. Reduce the number of animals.
2. Buy additional feed.
3. Increase your production.

Options 1 and 2 are simple management decisions. Extra effort and cost are needed for option 3, but the money you eventually will save may be worth the initial labor and cost.

Methods for increasing production include monitoring grass growth and grazing periods; this allows for regrowth. Controlling weeds is another method for increasing pasture production. Partial or complete renovation may be required to achieve better pasture production. More information on weed control and pasture renovation is included in Lessons 3 and 4, respectively, of this module.

* Remember, this is the AUM value for a 1,000-pound cow plus calf. Adjust the AUM value to reflect the weight of your stock.

Feed and Forage Balance Activity Sheet, page 3 of 3

A feed and forage balance worksheet example:

A landowner has 10 nonirrigated acres. He cuts hay on 5 acres and grazes two horses on the remaining 5 acres. He considers his pasture and hay ground to be in good condition. Using the tables provided, estimate the feed and forage produced and check for balance.

Land production:

Feed: Assume that a pasture is in good condition and not irrigated, so two tons of hay per acre are produced (see table.) The landowner has five acres, so **5 acres x 2 tons = 10 tons of hay.**

Forage: That other 5 acres is in good condition but is not irrigated, so the pasture produces 2 AUM's. **5 acres x 2 AUMs = 10 AUMs**. If the 5 acres is one big pasture without any cross fencing, eight horses could graze for one month, since 1.25 is the Animal Unit for a horse (10 divided by 1.25 equals eight.) Alternatively, four horses could graze for two months, or two horses for four months. This is just a general rule of thumb based on giving the horses access to the grass 24 hour a day, seven days a week. Horses do not need continual access to forage unless they are work horses. The deciding factor is always the grass plant. Use your key species to help you make the decision on when to graze and when to rest. No matter what these calculations tell you, when the grass is grazed to a certain height, it needs time to regrow.

Animal requirements:

Feed: A horse will eat 0.5 tons per month. You have two horses and usually feed hay for five months, so **0.5 x 2 horses x 5 months = 5 tons needed to feed the horses.**

Forage: **1.25 AUMs x 2 horses x 7 months of grazing = 17.5 AUMs needed**

Balance – add it up:

The hay land is producing 10 tons of hay and is feeding two horses 5 tons of hay over five months. This is more than enough hay to cover the 5 month feeding period. This excess production will allow for emergency feed during unusually cold weather or during the growing season when you need to buy more grass-growing time. It also may provide extra income, if the excess production is sold.

The pasture is only producing 10 AUMs, while the horses are requiring 17.5 AUMs. The excess hay produced on the 5 hay land acres will cover a portion of this shortfall. The landowner will either have to purchase feed or lease other pasture land to cover the remainder of the shortfall.

By allowing the horses to graze only four to six hours a day at intervals, you could increase the AUMs in your pasture. Subdividing the pasture is one way that you can control where they eat. Keeping records and monitoring your grass height are the keys to a successful grazing system.

Guidelines for Exercise Runs and Paddocks Information Sheet

Another option is to pen your horses up in a paddock or sacrifice area, or an exercise area. Exercise runs or paddocks are usually areas of bare soil or sand/soil mix with little grass or other vegetation. They are fenced, open areas for a horse to use for outdoor exercise. This is also one way to make the grass in your pastures last longer. Horses will eat more than they need if given continuous access to pasture grasses. Because horses do not need access to forage all day, it is suggested that horses be kept in paddocks or exercise runs.

An paddock or sacrifice area should be a minimum of 400 square feet per adult horse.

An exercise run for a horse is different than a pasture or a sacrifice area. Exercise runs are generally attached to the sacrifice area or paddock. They require more land and more money for fencing and other amenities. Horses prefer to run along a fence line. For horses to get the most use of a given exercise area, several long, narrow runs are best. Although square areas require less fencing, several long narrow runs will let separated horses exercise together without interfering with one another. Minimum width is 24 feet; length can be any distance that best fits your plans. Lay out long, narrow runs across a slope to minimize soil erosion. Generally, try to avoid runs on slopes that are greater than 4 percent.

Locate exercise runs and sacrifice areas or paddocks on relatively stone-free, well-drained soils. Improve footing by spreading sand at least two inches deep on existing soils. Add more sand as it becomes mixed with the soil. Sand helps reduce dust, mud and erosion.

Keep exercise runs and paddocks clean by removing accumulated manure frequently. This not only looks tidy, but it reduces pollution of surface water that runs through the area.

Divert clean runoff safely away from areas outside of animal exercise areas to the nearest watercourse or wetland area. Grass filter strips around the edges of an exercise area will greatly reduce any pollutants that might leave the site.

Grazing Planning and Monitoring Activity Sheet

What is my key species? _____

At what height can I begin grazing the key species? _____

At what stubble height should I stop grazing my key species? _____

About how many days of rest should my key species need for recovery after grazing?

Spring _____

Summer _____

Fall _____

What height should the key species reach before I regraze it? _____

Where will I put my animals while pastures are resting? _____

_____

_____

What can I do to ensure forage is evenly grazed? _____

_____

_____

Next, fill out the grazing dates worksheet so you can track how well your animal forage demand meets your land productivity, and whether you're doing a good job of managing grazing to favor your crop: grass.

Module 5, Lesson 2

Grazing Dates Worksheet

Use this worksheet to keep track of the date you started grazing, the number of animals per pasture, and the grass condition (good, fair, poor). Make copies of the blank worksheet so you can fill out a new form for each grazing year.

	Pasture 1		Pasture 2		Pasture 3		Pasture 4		Pasture 5	
	Dates grazing started and ended	Pasture condition	Dates grazing started and ended	Pasture condition	Dates grazing started and ended	Pasture condition	Dates grazing started and ended	Pasture condition	Dates grazing started and ended	Pasture condition
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										

Stubble Height and Regrowth Recommendations Information Sheet, page 1 of 2

	Suggested Height at Start of Grazing (inches)	Growth Stage at Start of Grazing	Minimum Stubble Height (inches)
Grasses			
Tall fescue	8	Early boot	4
Orchardgrass	8	Boot	3
Smooth bromegrass	8	Early boot	4
Meadow bromegrass	8		3
Meadow foxtail	10		4
Basin wildrye	10		8
Crested wheatgrass	4	Vegetative	2
Tall wheatgrass	10	Vegetative	6
Intermediate wheatgrass	8	Early boot	4
Pubescent wheatgrass	8	Early boot	4
Timothy	8	Boot	3
Kentucky bluegrass	6	Vegetative	3
Reed canarygrass	12	Vegetative	4
Legumes			
Alfalfa	6-18	Mid to late bud	2
Red clover	6	Early bloom	3
Alsike clover	6	Early bloom	2
Sweetclover	8		6
Ladino clover	4-8	Early bloom	3
Strawberry clover			2
Broadleaf birdsfoot trefoil	8	Early bloom	3
Narrowleaf birdsfoot trefoil	8		3
Sainfoin	12	Early bloom	6
Cicer milkvetch	8	Early bloom	4

These figures are from Nevada. Tailor this information to local climate and growing conditions.

Stubble Height and Regrowth Recommendations Information Sheet, page 2 of 2

Species	Regrowth time (days)
Alfalfa	28-40
Trefoil	24-30
Clover	20-26
Sainfoin	28-40
Milkvetch	24-30
Orchardgrass	20-36
Tall fescue	20-36
Timothy	28-36
Intermediate wheatgrass	24-30
Smooth bromegrass	24-30

These figures are estimates for Nevada. Tailor this information to local climate and growing conditions.

The values are for dryland conditions. Regrowth rates for irrigated pastures will be different.
The data is representative of hot summer conditions when plant growth slows considerably. The above figures do not apply during the early spring when grasses are growing fast. At that time of year, regrowth may occur in as little as 10 to 14 days. As the weather gets warmer and rainfall slows down, so does grass growth.

Managing Grazing for Sustainable Pastures Glossary, page 1 of 2

Animal days per acre (ADA): the amount of forage that will be removed from each acre of land by a given number of animals in a specific amount of time.

Animal unit (AU): Forage required for one 1000-pound mature cow, with or without a calf of up to six months old, or an equivalent.

Animal unit month (AUM): The amount of forage required per month for one 1000-pound mature cow, with or without a calf of up to six months old, or an equivalent.

Carrying capacity: The average number of livestock and/or wildlife that may be sustained on, with out being detrimental to, a range or pasture.

Feed: For purposes of grazing management discussions, feed is defined as hay you provide an animal.

Forage: For purposes of grazing management discussions, forage is what your animals consume by grazing.

Forage yield: The actual amount of forage available, generally reported on a per acre basis.

Grazing management: The manipulation of animal grazing in pursuit of a defined objective.

Overgrazing: Grazing regrowth on forages that have already been grazed once without an adequate rest period.

Paddock: Aka sacrifice area. Small field or enclosure used to confine animals when they are not grazing, generally for horses.

Palatability: The tastiness or desirability of a particular plant. Depends on plant species and stage of plant growth.

Pasture: Ground or field suitable for grazing.

Rangeland: Land that is dominated by native vegetation.

Selective grazing: Grazing of certain plant species, individual plants or plant parts to the exclusion of other plant species, individual plants or plant parts.

Severe grazing: Removing more of the grass plant that is desirable. Not to be confused with overgrazing, which occurs when plants are regrazed before sufficient rest and recovery has occurred.

Stock day: The amount of forage required to support one animal for one day.

Stock days per acre (SDA): The number of animals that can be supported on one acre for one day.

Stock density: The number of animals in a particular area at any moment in time; expressed in terms of number of head per acre.

Stocking rate: The feed demand of grazing livestock.

Stubble: The basal portion of herbaceous plants remaining after the top portion has been harvested, either artificially or by grazing animals.

Managing Grazing for Sustainable Pastures Evaluation

(Circle your answer.) Was this lesson:	Not at all	----------→			Very much so
Current, up-to-date?	1	2	3	4	5
Understandable?	1	2	3	4	5
Presented in an interesting way?	1	2	3	4	5
Did the program answer any questions you had?	1	2	3	4	5
Did it help you learn how to do new things or how to do something better than you knew before?	1	2	3	4	5
Do you intend to use any of the information from this lesson?	1	2	3	4	5
Overall, was this program worth your time to attend?	1	2	3	4	5

What was the most informative part of this session?

Which part was too technical and why?

Which part was too easy and why?

On which part(s) do we need to spend more or less time?

On which topic(s) would you like more information?

What one practice from this lesson will you implement within a year?

Managing Grazing for Sustainable Pastures Post-class Mini-test

1. List five potential benefits of grazing management.

   a.
   b.
   c.
   d.
   e.
   f.

2. T or F An AUM is the amount of forage required for one 1000-pound cow, plus or minus a calf, for one month.

3. T or F Animal Days Per Acre considers animals, time, and size of pasture.

4. Name three ways that you can improve your land's grazing capabilities.

   a.
   b.
   c.

5. T or F Creating a sacrifice area and limiting your animals' time on specific pastures are good first steps on the road to improving forage production.

6. T or F The main objective in any grazing system design is to have a confinement or sacrifice area so you can control **when** animals graze and have several pastures available so you can control **where** they graze.

7. T or F Placing salt or mineral licks and water sources adjacent to access gates is a sound and acceptable management practice for pastures.

8. T or F The length of time you need to rest a given pasture never changes.

9. T or F The main reason for record keeping of your grazing management is to gain a feel for how long you will be able to graze each pasture.

10. What percentage of their body weight do grazing animals need to consume per day?

    a. 1 to 2 percent
    b. 2.5 to 3 percent
    c. 5 to 10 percent
    d. more than 10 percent

Managing Grazing for Sustainable Pastures Post-class Mini-test Answer Key

1. Benefits of designing a grazing system.
    a. Reduces erosion
    b. Improves water quality
    c. Improves range or pasture condition
    d. Allows for maximum vigor of key species
    e. Allows seed production of key species
    f. Allows seedling establishment of key species
    g. Increases forage production – saves $$$
    h. Attempts to ensure or at least improves forage supply throughout the year
    i. Increases grazing capacity
    j. Allows for flexibility
    k. Enhances wildlife habitat
    l. Improves efficiency of your property
2. T
3. T
4. Ways to improve your land's grazing capacity
    a. Control weeds and undesirable plant growth in forage and adjacent areas
    b. Prevent or reduce differential or selective grazing
    c. Do not allow 24/7 access to forage area; limit access to a few hours a day
    d. Divide or subdivide grazing areas into smaller blocks, where feasible
5. T
6. T
7. F
8. F
9. T
10. b. 2.5 to 3 percent