

# FIND YOUR FOOTPRINTS

**Among the lessons to be learned at grazing schools, walking pastures and observing forage growth top the list for creating a plan for good pasture management.**

*Story & photos by Heather Smith Thomas*

**T**he most important things to find in a pasture are your own boot prints. That message was echoed by instructors at a four-day workshop on intensive management of irrigated pastures. The workshop was hosted by the Lost River Grazing Academy and sponsored by the Cooperative Extension System of the University of Idaho.

Groups of yearling heifers at the Nancy M. Cummings Research, Extension and Education Center, 8 miles north of Salmon, Idaho, watched with interest last fall as instructors and students wandered through pastures fenced with hot wire. This informal setting provided the backdrop as participants learned more about stocking rates, livestock nutrition and feed allocation, estimation of forage needs, low-stress livestock handling, pasture ecology, paddock design, plant identification, feed banking, electric fencing, livestock diseases common in pastured animals, and other subjects pertinent to pasture management.

Morning sessions were conducted in a classroom atmosphere at the Carmen Grange. Afternoons at the ranch featured hands-on exercises in calculating paddock sizes, moving cattle and identifying weeds.

## **Visualizing feed needs**

Shannon Williams, Lemhi County Extension agent, introduced participants to the subject of intensive grazing. She said her goal was to get people to think about how much a cow needs to eat by looking at the pasture.

Williams asked participants to lay out a square in one location in the field that would encompass the grass a cow would need for one day. Using this exercise, they could start to visualize how much feed they would need for the two or three cows they were given for the rotational grazing exercises during the rest of the four-day workshop.

"There's a lot of variation in pastures, even in the same pasture from one spot to another," Williams said. "You can't always say that your pasture segments will be exactly 5 acres ... with x number of cows per acre. It just doesn't work that way."

Paddock size will vary, depending on what type of forage is there, how tall it is, how long it has been since it was last grazed and what the water situation is, she explained. She had participants look at all of these factors to realize that a pasture management plan has to be very flexible. Knowing exactly what you have in the pasture is an important key to successful management.

The workshop participants were divided into teams for the four days. The teams walked through pastures and installed temporary electric fences after trying to calculate how much forage their test cows were going to need for the next 24 hours. Each day they fine-tuned it, looking at how close they had come in their estimates and what their goals for grazing were. Did they want to leave a 3-inch stubble height? Or was it important to remove 50% of the forage?

"There's a difference in goals, depending on where a pasture is in its growth stages, what types of plants, what type of cattle,"



► Instructors at the grazing workshop stressed that the rancher is the key ingredient for making a management-intensive grazing (MIG) system work; he or she has to be out there to see what is there.



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Williams said. "There's science to it, but pasture management is also an art. . . . You can have the forage analyzed and take soil samples, but the most important part is to get out there," Williams said.

### The learning curve

You will always make some mistakes as you learn, said Jim Gerrish, research assistant professor at the University of Missouri Forage Systems Research Center, Linneus, Mo. You start out not knowing what you don't know. Then you learn a little, and things get better. Then you crash, make some mistakes, and have to pick yourself up and learn from those mistakes.

Mother Nature always gives you the test first, then tells you the lesson, Gerrish said. You have to learn the right answers.

The main thing, according to the instructors, is to walk your pastures and revamp your grazing plan as you go through the season, so you can make your plans again for next spring. Look at your water locations, fences and other factors, so you can see why you overestimated or underestimated your grazing capacity.

### Goals of intensive grazing

Gerrish said that the first goal of management-intensive grazing (MIG) is to meet the nutritional needs of the livestock. Location of water affects the distribution of the cattle the most. He discussed the factors affecting whether the cattle would eat pasture or harvested feeds to meet their nutritional needs.

"Grass stands still, and cows like to move," he pointed out. "It's always more economical to let the cows harvest the forage rather than move the forage to the cows."

Goal 2, he said, is to optimize pasture yield, quality and persistence. If cattle graze grass at phase 1 (early growth) there's a lot of

quality there, but not much quantity. The cows have a hard time getting full, and the grass never gets a chance to produce to its potential. If you wait until phase 3 (maturity), there will be a lot of quantity but lower quality. So you want to keep pastures in phase 2 growth as much as possible.

Goal 3 is to maintain or enhance the natural resource base, looking at soils, water, the plant community, wildlife habitat, etc.

Goal 4 is to integrate the appropriate technology into a practical system. To implement the goals, he said, you can adjust the rest periods, use the shortest grazing period possible for each particular piece of pasture, adjust stocking rates to meet the carrying capacity of the pasture, and use the largest herd possible for the shortest time. This gives the grass better opportunity for quick recovery, so it can be grazed again.

Gerrish defined overgrazing as too much grazing over time.

"Some pastures you'll use for just a short time," he explained. "You may have two pastures and when you look at them, there may be the same amount of grass left in both. Yet one might be overgrazed and the other isn't." One pasture could be overgrazed because the cattle have been there continuously, and the plants haven't had a chance to regenerate. The other pasture has been grazed by more cattle during a shorter time, so the plants can immediately start to come back.

Gerrish describes overgrazing as "a plant's being grazed before it has a positive

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carbohydrate balance. This can happen any time you have cattle there too long, or if your rest period is too short. A common thing you'll see in continuously grazed pastures is overgrazed areas right next to mature clumps the cattle won't eat. You have phase 1 and phase 3 side by side, and no phase 2 grass."

Gerrish said that what you see above ground reflects what you have below, in the roots. If you have short plants above ground all the time from constant grazing, the plant will have a short root system. It never had enough green matter above ground to develop more extensive roots, thus it has a weaker system. He also mentioned that what you have (plant health, height, etc.) for the first four to six weeks in the summer will determine what the pasture will do for the rest of the season.

### Grass growth curve

Gerrish explained the three phases of grass growth. "The first is when grass comes out of dormancy in spring or after being harvested short. It takes awhile to get enough leaf area to capture solar energy so you can have rapid growth."

Cattle like the phase 1 grass because that's when it's very high in quality and palatability, he said. "So in a pasture being grazed continually, without rotation, you see cattle going back and grazing the same short spots, seeking out phase 1 grass. This is stressful for the plants; they don't have enough leaf area to support maintenance."

You can think of plants the same way that you do cattle; they have maintenance and

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growth requirements. In phase 1 the grass is just maintaining itself and the little bit of growth is high quality.”

If the pasture is rested, the plants start to accumulate enough leaf area until they can take off and grow more swiftly (phase 2).

“This type of growth will continue until you get so much that the mass of the plant takes a lot of energy just to maintain its structure,” Gerrish explained. “There’s also some shading of the lower leaves and some leaves dying. When it gets to this point, growth rate slows dramatically and the plant goes into phase 3.

“This is basically when we cut hay,” he continued. “The plant is as big as it’s going to get.”

The goal in a managed grazing situation is to try to keep the grass in phase 2 growth as much as possible, Gerrish said. “We want to put cattle in when it’s fairly high up on the phase 2 portion of the growth curve, then take them off when it gets toward the lower end of phase 2. If you graze it all the way back to phase 1, stripping the leaves, it takes a lot longer to recover; you will need a longer rest period.”

Gerrish said that cattlemen who find they

are running out of grass are usually grazing it too short.

“This makes their rest periods longer than they can afford to have,” he said. “If you do a good job of irrigating and stocking, and always keep grass 4 to 6 inches tall (so it’s always in phase 2), continuous grazing can work.”

Problems can arise when there are temperature extremes and when the grass doesn’t get water when it needs it, he said. “The growth rate therefore goes fast for awhile and then slows, so it’s hard to keep everything in phase 2.” Rotational grazing can help the rancher keep more of the grass in phase 2 for as much of the season as possible.

Adjusting rest periods of various pastures to meet this goal is part of the juggling act. “Some people say grazing management is an art and not a science, but we always say it’s an art based in science. Learning how to adjust and flex the grazing period and rest period is the real art part of grazing that you can’t learn from a textbook or workshop. Until you actually do it, you can’t learn grazing management,” Gerrish said.

## Stocking rate

The most challenging factor in grazing is keeping forage supply and animal demand in balance. “To have a good grass-based operation, you almost need to be able to vary your stocking rate seasonally,” Gerrish said. If you have just a cow-calf operation it is more difficult than if you also run yearlings for part of the season to match the grass supply.

The stockman should also look at forage demand rather than cow numbers. A lactating cow has a much higher demand than a dry cow, for instance. “If you have superior milking cows, you may almost double the stocking rate on the farm in terms of forage demand, when you go from a dry cow at maintenance to peak lactation.”

You run into situations each year that you haven’t encountered before, and you learn from your mistakes. “I’ve been doing this about 20 years, and I still make my share of mistakes and learn something new each season,” he said.



**Editor’s Note:** *Several grazing schools will be held this summer and fall. Contact your local Extension service to see if one will be conducted near you. Information about grazing schools to be held at the University of Missouri Forage Systems Research Center is presented in “Beef Business” on page 132.*