

# Managing Irrigated Pastures

## Tips for Southeastern Arizona

**Quote: "Pasture Management should really be called 'grass farming.' Think of your pasture grasses as your crop and the animals as your method of harvest."**

*Snohomish Conservation District, Washington State*



### Grazing for Profit Not Pollution

You can have it all. With proper pasture management, you can have clean water, healthy animals, and a thick, vigorous pasture - all at a reasonable cost. The first step towards these goals is to recognize the differences between poor and proper management.

For people who have just moved from the city, a 5-acre farm may seem like unlimited space. Consequently, many small acreage landowners put too many animals on too little pasture. Close grazing and trampling can result in bare ground and cause poor animal health, erosion, and nutrient runoff into ditches and streams. Signs of poor pasture management include:

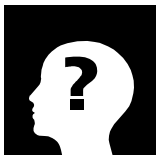
Bare ground fills in with weeds.

- ↪ Large "patchy" pasture with preferred plants overgrazed and weeds undergrazed.
- ↪ Hungry animals chew fence posts and reach through the fence to graze.
- ↪ High browse lines on trees and shrubs.
- ↪ Animals trample streambank, add sediment to water, and widen stream channel.
- ↪ Gravel is covered with sediment from eroded pasture.

By managing your pastures, you can provide clean water and raise healthy animals. Signs of good pasture management include:

- ↪ A thick, nutritious sod created from proper grazing, fertilization, and irrigation.
- ↪ A large pasture divided into several paddocks that are rotated and evenly grazed.
- ↪ A sacrifice area that is used when pastures are wet or recovering from grazing.
- ↪ Animals are fenced away from streams and water is provided in each pasture.
- ↪ Troughs and salt licks are placed away from wet areas and open water.
- ↪ Grass and tree buffers are placed between the pasture and open water.
- ↪ Gravel is free of sediment and provides fish habitat.

Read on to find out how to better manage your pasture...



### Pasture IQ

During a 6 month grazing season, how many acres of irrigated pasture does it take to provide the forage needs of a...?

- a) horse
- b) cow
- c) sheep
- d) llama
- e) goat

Answers: a) 1 acre, b) 1 acre, c) 1/3 acre, d) 1/3 acre, and e) 1/5 acre. Assumes that animals are eating 2.5 to 3.5% of their body weight on a daily basis. Actual numbers may vary according to pasture conditions, management, and weather.



### What Are My Pasture Options?

In general, your acreage will point to three pasture options:

1. *Exercise lot (1 acre or less)*. If you have 1 acre or less of pasture or are overstocked (see "Pasture IQ"), use the pasture as an exercise lot. To control grazing, keep animals in roomy pens most of the day and exercise them in the pasture for a couple hours. A well-vegetated pasture can serve as a grass buffer between the pens and any watercourses. Since exercise areas provide little forage, the bulk of feed will come from hay and grain. Manure will probably need to be hauled away to avoid nutrient overload in soils and bacteria runoff into water. Animals will have fewer problems from eating soil and poisonous plants.
2. *Full time pasture (1 to 5 acres)*. If you have 1 to 5 acres and few animals, you can aim for higher forage production and less feed costs. Rotational grazing divides one large pasture into several smaller pastures, or paddocks, so that one paddock is grazed while the others are rested for regrowth. This system requires more management and fencing. If the manure nutrients produced by animals are in balance with forage needs, then most of the manure may be recycled on the pasture. A healthy pasture will produce more forage, lengthen the grazing season, and thicken the sod for better soil and water conservation.
3. *Hay and pasture field (5 acres or more)*. If you have 5 acres or more, you can manage for pasture or make hay. Pencil out the costs of haying equipment, custom-harvest, and labor before you decide to make hay. Making hay may not be feasible on small areas. The manure nutrients produced by animals will most likely be less than the forage requirements. Commercial fertilizer may be needed for full forage production.



### Spread Fertilizer at the Right Rate, at the Right Time

Excess soil nutrients can wash into water or produce forages that sicken your animals. A soil test will give you fertilizer recommendations that are tailored to your soils and crops. Send soil samples to a certified lab and include information about whether your pasture is newly seeded or is established. If your soil test recommends fertilizer, then consider spreading manure as an organic fertilizer and save money! In general:

- Nitrogen boosts grass growth.
- Sulfur, phosphorus, potassium and boron benefit clovers.

You may not need to fertilize your pasture, if the soil test shows that there are adequate soil nutrients from animal manure. If you do need to fertilize your pasture, avoid applying fertilizers during the rainy months. Fertilizers can leach or wash into water and waste your time and money!



### Rotational Grazing: Graze the Best, Leave the Rest

Proper grazing can increase grass growth. When grass is grazed before it produces a seed head, the plant remains at a "young" stage and sprouts nutritious side shoots. Once grass matures and produces a seed head, it will stop growing and be less palatable or nutritious.

Severe grazing kills most plants. In a large, single pasture, animals will graze "cafeteria style." This means livestock will eat the young, palatable plants and leave dried out stems, less palatable grasses, and weeds. Once livestock graze palatable plants lower than 2 to 3 inches, these plants decline and die. Consequently, weeds are left to take over. This process happens slowly and most people won't notice that a pasture is declining.



To maintain preferred plants and to control weeds, try rotational grazing or management intensive grazing (MIG). Here's a brief description of how it works. Divide a large pasture into several, smaller paddocks. (Temporary electric fencing is an easy and low-cost way to subdivide the pasture into paddocks.) Rotate livestock through the paddocks, by turning livestock in a paddock when grass reaches 6 to 8 inches, and moving them out when grass is grazed down to 2 to 3 inches. The "former" paddock is given a rest period for regrowth and the animals are started on a "new" paddock. Through this system, preferred plants and weeds are evenly grazed and weeds are less likely to form seeds and spread.

The resting period is critical for grass recovery and regrowth. Pastures may need a regrowth period of two to three weeks in the spring, yet require six to eight weeks in the late summer and fall. This follows the old adage: fast growth, fast rotation through paddocks. Slow growth, slow rotation. Rotational grazing takes a bit more management, but it pays in healthy animals, healthy pastures, and a thick, non-eroding sod for a healthy environment. For more information, see the "For Help" section at the end of this fact sheet.



### To Plant or Not to Plant

If you're ready to reseed, then you must dislike what is in your pasture. However, what is in your pasture is what will grow under the current management conditions! Reseeding, without changing management, is an expensive and ineffective practice that may result in the return of the old pasture. Identify the plants present. If enough grasses exist, try to improve the pasture with these practices:

- Good grazing management
- Fertilization
- Irrigation management

If, the pasture does not improve after better management, then reseed. Common pasture plants for southeastern Arizona include warm-season plants such as bermudagrass, blue panic, and cool-season plants such as tall fescue and 'Matua' brome grass.

Some commercial seeding mixtures have a variety of grasses and legumes and use a "shotgun" approach with the hope that something will catch. These mixtures are hard to manage because each species has different growing seasons and livestock appeal. The result of such a mixture will give you a patchy-looking pasture with some plants overgrazed and others undergrazed. In general, a mixture of one grass and one legume that is adapted to your site is recommended. For site specific recommendations, see the contacts at the end of this fact sheet.



### Pasture Calendar

Healthy, unstressed plants will begin to grow earlier in the spring, produce more during the summer, and continue later in the fall. To get the most out of your pastures:

*In spring* – rapid spring growth produces up to half the annual production for cool-season grasses.

- Start animals early on firm, well-drained pastures.
- Graze fields 1 to 2 times in the early spring and hay later.
- Put animals in when grass is 6 to 8 inches. Take them out when grass is 2 to 3 inches.
- Make hay or bring in additional animals to take advantage of increased growth in the spring.



*In summer*—cool-season plants have slower growth rates while warm-season species begin growing more rapidly.

- Leave more than 3 inches of grass to cool ground and conserve moisture on hill pastures.
- Mow to remove weed seed heads, and drag a chain to expose parasites in manure droppings.
- Spot-spray troublesome weeds, following label directions.
- Irrigate pastures and fertilize as necessary to increase production. Saturated soils are common after irrigations or heavy rains. To prevent compaction, deep hoof prints, and an unfavorable soil surface, take animals off of wet pastures and confine them to holding pens or a well-drained pasture.
- Feed hay and grain to rest a cool-season pasture if it cannot maintain the 6-8" plant height.
- Graze dormant pastures low enough to expose the plant crown to fall rains.

*In fall* – rains restart pasture growth

- Graze animals on fall growth and leave at least 3 inches of grass.
- Test soil fertility and pH for pastures to be seeded next year. Lime if needed.
- Take animals off pastures by November 1 if soils are wet or grass is short.

*In winter* – wet soils signal pasture rest

- Take animals off of wet soils and confine them to the animal yard or a well-drained pasture. This is one of the most important things you can do for wet pastures. Deep hoof prints and a chopped up ground surface are signs that soils are too wet to pasture. Saturated soils are common after irrigations or heavy rains. Use grassed buffer strips around animal yards. The grass will trap sediments and nutrients that may runoff from this area. Use controlled grazing on well-drained pastures where grasses are actively growing. Light grazing will control winter annual weeds. Graze no lower than 3 inches.

## For Help:

The local soil and water conservation district and USDA-Natural Resources Conservation Service (NRCS) and the University of Arizona Cooperative Extension Service offers publications, workshops, and on-site assistance on pasture management and production. Contact your local office by looking in the blue pages in the phone book.

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS <<http://plants.usda.gov>> and Plant Materials Program Web sites <<http://Plant-Materials.nrcs.usda.gov>>.

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