

## Livestock Grazing Management

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### Farm Pond

Farm ponds are defined as a pool of water formed by a dam or pit, to supply water for livestock, recreation and wildlife, and to control gully erosion. A typical farm pond is formed by building a dam across an existing gully or low lying area. Earth for the dam is removed above the dam with heavy machinery to form a bowl. Generally the ponded area fills with water within a year. An overflow pipe is installed through the dam to control the water level and to allow water to spill through the dam without causing erosion. Farm ponds prevent soil erosion and protect water quality by collecting and storing runoff water. Creating a farm pond will add value and beauty to a farm or farmstead and provide a water supply in emergencies.

### Before implementing a farm pond, consider the following:

- Are adequate soil conservation measures installed near the proposed pond site to protect it from filling with sediment?
- Locating a clean, dependable source of water to fill the pond.
- The size of the pond and holding capacity based on uses (i.e. livestock, wildlife and recreation).
- The soil type at the proposed site to determine if it is capable of holding water.
- A natural or constructed spillway must be provided for overflow. If the dam is for a fish pond, the pool should have at least 1/2 acre of surface area and be at least 8 feet deep.
- You must obtain necessary permits or easements.
- You must divert runoff from feedlots, barnyards and septic tanks if the pond is used for drinking water, livestock, wildlife or recreation.
- Clear all trees and shrubs within at least 30 feet of the dam's spillway and embankment.
- Generally for every surface acre of pond there should be at least 10 acres of drainage area. Too large a drainage area for the pond site may make the site unfeasible.

### Maintenance:

- It is imperative to keep outlets free of debris.
- Burrowing animals, trees and shrubs should be kept off the dam.
- Maintain grass cover on the dam.

Contact NRCS for engineering specifications.

### Planned Grazing System

Planned Grazing Systems are best defined as planting forage and using grazing rotations to maximize production and reduce sediment and nutrient runoff. This may include planning an alternate watering system to keep animals away from stream banks and riparian zones.

Pasture is divided into two or more pastures or paddocks with fencing. Cattle are moved from paddock to paddock on a pre-arranged schedule based on forage availability and livestock nutrition needs. Pipelines maybe installed to convey water to an upland area or a livestock pond can be constructed with a dam or embankment. A trough or tank, with devices for water control and waste water disposal may be installed. The installation of a well or spring is a positive alternative.

Planned Grazing is beneficial because it improves vegetative cover, reduces erosion and improves water quality. Planned grazing increases harvest efficiency and helps ensure adequate forage throughout the grazing season. Increasing forage quality and production will help increase feed efficiency and can improve profits. Rotating also evenly distributes manure nutrient resources. Keeping animals away from stream banks will help protect wetlands and riparian zones from livestock trampling and waste.

**Before implementing a planned grazing system, consider the following:**

- Is there enough good quality water available in each pasture to meet the needs of your livestock?
- Is the mix of grass and legumes adequate for the herd and soil types?
- Does the pasture meet the nutrient needs of your cattle?
- Management alternatives for periods of low forage production.
- Paddocks/pastures will have to be rotated so the same paddocks will not be grazed the same time year after year.
- Rest periods must be planned so each paddock/pasture will have adequate time to recover during the growing season to promote plant growth.
- All livestock must be removed from pastures while they are being rested.

**Maintenance:**

- Keep fencing secure.
- Mow or hay paddocks/pastures during heavy growth periods.
- Remove pasture water systems during winter if necessary, and reinstall them in the spring.
- If herd size changes dramatically, update rotation schedule, paddock numbers and paddock size.
- Apply fertilizer and nutrients according to soil tests.

**Stream Protection**

Stream protection involves protecting a stream by excluding livestock and by establishing buffer zones of vegetation to filter runoff and absorb excess nutrients and chemicals. Grass, riprap and gabions are installed along the edges of a stream to buffer the banks from heavy stream flow and reduce erosion. Fencing prevents cattle from trampling banks, destroying vegetation and stirring up sediment in the streambed. Better water quality results from reducing amounts of nutrients, chemicals, animal waste and sediment entering the stream. In addition, buffer zones provide cover and habitat for birds and small animals.

**Before implementation consider the following:**

- You must install an off-stream water system for livestock or limit livestock access to the stream. Are proper soil conservation measures installed in the stream watershed to prevent siltation of buffer zones and the streambed?
- Is a stream crossing needed for livestock?
- Fence livestock out of the stream and provide an adequate seedbed for vegetation by smoothing stream banks.
- The vegetation area along stream banks should be between 15 and 25 feet wide.
- Remove fallen trees, stumps and debris that might cause turbulence in the stream.
- Remove trees and brush that adversely affect the growth of desirable bank vegetation.

**Maintenance:**

- Repair fences as necessary.
- Avoid damaging buffer zones with herbicides from surrounding cropland.
- Remove off-stream watering systems in the winter if necessary and reinstall in the spring.

Check local recommendations and NRCS for technical assistance.

### **Well Protection**

Well protection involves changing farming practices which occur on or near the farmstead in order to reduce the risk of contamination of water sources, mainly the well. The handling of materials could contaminate a water supply, and the distance of possible contaminants from a well or other water source, could have a dramatic effect on the quality of drinking water on the farm. To protect your well, take an inventory of farming practices like pesticide mixing and container washing and disposal. Then assess the risk of contamination and make necessary changes. Modifications in farming operations may improve efficiency and reduce operation or production costs. Soil conservation practices may be necessary to divert runoff from the well area.

#### **Before implementation, consider the following:**

- Are necessary soil erosion practices in place?
- Take an inventory of the operations conducted at or near the farmstead well.
- Properly close and seal all abandoned wells near the farmstead.
- The well should be uphill from any feedlots and pesticide and herbicide spraying, storage or mixing.
- Mix farm chemicals and rinse containers a minimum of 100 feet down slope from the well.
- Apply pesticides on days with minimal wind to prevent chemical drift into farmsteads.
- Use an anti-siphon device in the hose when filling a sprayer tank to be sure chemicals will not siphon back to the well and/or keep the hose at least 6 feet from the top of the tank.

#### **Maintenance:**

- Keep an emergency chemical spill kit handy.
- Maintain any filter strips surrounding the farmstead or wellhead and repair wellhead casing as needed.
- Repair any cracks in concrete pads used for chemical mixing, loading or container washing.

### **Pasture Management**

Proper treatment and use of pasture land is important to minimize adverse impacts to groundwater and surface water by maintaining or improving the quality and quantity of forage, protecting the soil, conserving water and optimizing the use of fertilizers and pesticides on pasture. By postponing grazing for a short period of time this will protect bare ground or little ground cover from eroding. It will minimize movement of sediments from exposed soils and nutrients from manure to ground and nearby surface waters. As the vegetative cover increases, the filtering process is enhanced, trapping more silt and nutrients. Do not graze in early spring when ground is wet and soils are soft. Test soils and apply proper amounts of lime, manure and other nutrients to keep pastures healthy.