



Pasture and Grazing: Fact Sheet 3

GOAL: Learn about grazing strategies that are mindful of animal needs and improve your farm's natural resources.

Pasture:

A pasture is an area of land where grazing animals consume some or all of their food during the grazing season (typically between April and October). Pastures are full of domesticated forage plants, grasses and other vegetation for the animals to eat. A typical, well maintained pasture in the Northeast U.S consists of perennial cool season grasses and legumes (such as Kentucky bluegrass and white clover) that are nutritious and desirable to the grazing animals. Throughout the grazing season, pastures need resting periods to allow for vegetative re-growth.

Grazing:

With continuous grazing, animals have access to a pasture for an extended period of time. When given the opportunity, grazing animals will eat the most palatable plants and ignore the others, giving weeds the opportunity to take over the pasture. It can be difficult to control the timing or grazing intensity of your animals, and can lead to overgrazing¹, bare spots, surface runoff, weed proliferation and soil erosion in your pasture.

Overgrazing¹ is when animals consume pasture plants excessively and do not provide time for the plants to rest and grow, causing their nutritional value to drop.

Rotational grazing is a management strategy where a pasture is split into several smaller sections or paddocks. Animals are frequently rotated between paddocks to allow plants time to rest and regrow. This strategy is more labor intensive than continuous grazing, and has upfront investment requirements for infrastructure. However, it has many benefits, including improving forage capacity, strengthening livestock health, and reducing long-term costs of additional feed needed for your animals. Through planned grazing and nutrient management, your pasture vegetation grows healthy and vigorous while reducing your farm's risks of soil erosion and surface runoff. Healthy vegetation assists in recycling the manure and nutrients being deposited back into the soil, minimizing risks to surrounding water resources.

No matter what method of grazing you choose, there are many factors to consider when managing the livestock on your farm. The following sections provide tips and management recommendations to improve your forage, animal health and natural resources.



Photo courtesy of the University of Vermont Extension.

Grazing (continued):

Fencing and watering while grazing:

Pasture paddocks should be sized for the number of animals and the overall condition of the pasture. Animals can be grazed for as little as a few hours up to one week. Fencing can help organize animals in paddocks and keeps animals away from waterbodies. Animals with direct access to a water body can directly pollute the water and cause immediate health risks to you and your livestock.

Portable electric fencing options allow efficient and flexible subdivision of pastures into paddocks to balance forage supply and demand for a given time period while reducing livestock's direct access to water. Electric fence chargers are important and must be properly installed and grounded. Electric fencing that provides a charge (joules or volts) should be sized properly based on the type of animals and length of fencing around the paddock. Alternating Current (AC), battery and solar powered chargers are widely available.



Photo courtesy of USDA NRCS.



Photo courtesy of NRCS. Water crossing for livestock to reduce pollution risks and soil erosion.



Photo courtesy of USDA NRCS. Nose-operated demand pump draws water from nearby surface water and eliminates shoreline access.

It is important to provide animals with clean drinking water; portable watering troughs and automatic float valves are commonly used. The water may be piped to the trough through various pumping or gravity methods, depending on the water source and topography of the land. If animals must access a stream or pond for watering or crossing, consider fencing a vegetative buffer strip around most of the stream or pond. The fence will protect the vegetation and help with reducing potential manure pollution to the waterbody. It is important to maintain a 10 foot vegetative buffer between the fencing and the water's edge. It is also important to keep livestock at least 100 feet from any wellhead.

Sustaining Animals in Pasture:

The type and number of animals, the soils, and the overall condition of your pasture can determine the health and quality of your pasture and livestock. **Maintaining a healthy livestock farm with sufficient pasture land for the number of animals is not only important, it saves you money.**

The amount of pasture land you have is directly associated with your livestock health and overall production of your farm—this is referred to as the stocking rate and carrying capacity. The USDA definition of a stocking rate is the number of animals [based on live animal weight] currently assigned to an area for a given length of time. Carrying capacity is the maximum population size that the environment can sustain without additional resources. Comparing stocking rates to the carrying capacity of your farm provides you with a target number of livestock for your farm that can naturally be supported by the pasture area that exists. The number of animals supported by the land is based on many factors, including the ability to provide feed, water, shelter, manure storage and access to livestock yards and pastures. A general rule of thumb in the Northeast is 1-2 acres of land are needed to support one animal unit or 1,000 pounds of live animal weight in one year.

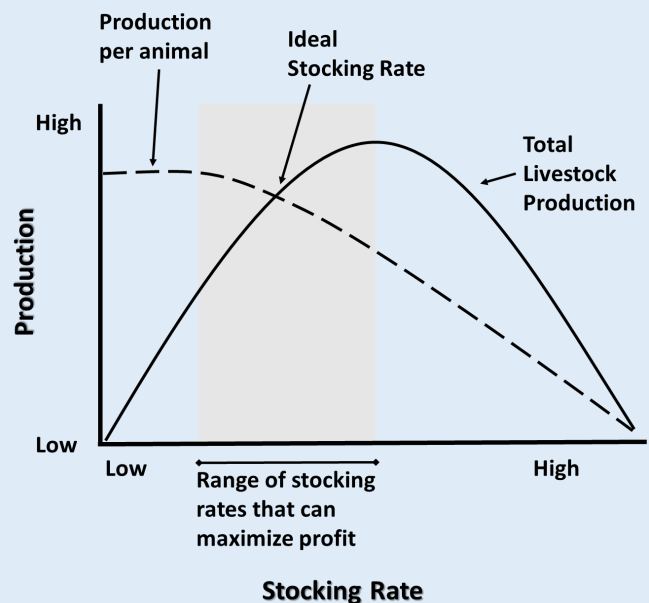
High stocking rate, or overstocking, is having more animals than the natural resources on the land can support. Overstocking is different than overgrazing. Overgrazing is related to the time exposure the animals have to that area. Overgrazing can occur on a farm that is understocked. Highly stocked farms can lead to unhealthy pasture vegetation and soil, runoff, increased feed and health costs for livestock, reduction of livestock productivity, and high risks of pollution.

SAVE MONEY & KEEP YOUR LIVESTOCK HEALTHY

When developing your pasture and grazing management plan you ideally want to determine the best strategy for your farm.

The amount of livestock on your farm can dictate the costs inputs and effect how much you can profit. Having more livestock on your farm does not always mean more production and profit.

Increased stocking rate can lead to needing additional feed, more of your time, and an increased risk to livestock health. Understanding how stocking rate can effect your farm can help you reduce additional costs and help keep your livestock healthy.



Understanding animal units:

How much an animal weighs directly relates to the amount of feed it requires, space it needs, and the amount of manure it generates.

One animal unit ≈1,000 pounds (lbs.) of live animal weight, is roughly equal to:

- **1 average horse or beef cow**
- **5-10 sheep or goats**
- **2-5 pigs**
- **250 layer hens**

Average stocking rate:

The average optimal stocking rate in the Northeast is 1-2 acres of land to support one animal unit for one year. To determine your property’s precise stocking rate talk to your local Conservation District. For a simple evaluation of your farm, check out the following samples.

Example 1: Low Stocking Rate Utilization

If a farmer has **15 acres** of pasture land, 6 horses, and 25 laying hens, is the farmer over or under utilizing the average stocking rate in the Northeast?

Step 1: Conversions

Horses:	1 horse ≈ 1,000 lbs. ≈ 1 animal unit ≈ 1 acre of land for support 6 horses ≈ 6,000 lbs. ≈ 6 animal units ≈ <u>6 acres of land for support</u>
Hens:	250 laying hens ≈ 1,000 lbs. ≈ 1 animal unit ≈ 1 acre of land for support 25 laying hens ≈ 100 lbs. ≈ 0.1 animal unit ≈ <u>0.1 acre of land for support</u>
Total:	6 animal units of horses + 0.1 animal unit of laying hens = 6.1 animal units on the farm 6 acres of land to support the horses + 0.1 acres of land to support the hens = ~6.1 acres of land are needed to support the livestock

Step 2: Stocking rate comparison

The Farmer has 15 acres of pasture land to support their current amount of livestock. Based on the average stocking rate in the Northeast, the farmer needs 6.1 acres to support the current number of livestock on the farm.

15 acres of current farmland is greater than 6.1 acres needed to support the livestock on the farm.

In Example 1, the farmer is **under utilizing** their land that supports the livestock on the property without additional feed or support.



Photo courtesy of USDA NRCS.

Example 2: Over Stocking Rate Utilization

If a farmer has **3 acres** of pasture land, 6 horses, and 25 laying hens, is the farmer over or under utilizing the average stocking rate in the Northeast?

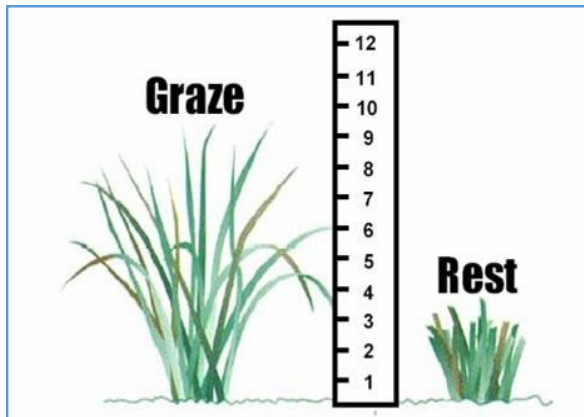
Step 1: Conversions (see Example 1, step 1)

Step 2: Stocking rate comparison

The Farmer has 3 acres of pasture land to support their current amount of livestock. The farmer needs 6.1 acres to support the current number of livestock on the farm.

3 acres of current farmland is less than 6.1 acres needed to support the livestock on the farm.

In Example 2, the farmer is **over utilizing** the land. The farmer would need additional livestock feed, livestock support, and pollution risk management strategies to support the current farm, livestock and the surrounding environment.



Graphic courtesy of the University of New Hampshire Cooperative Extension.

Overcoming challenges of grazing on your farm:

Unfortunately there is no “one size fits all” approach to grazing, and how you choose to graze your animals will be dependent on many different factors.

Generally, pasture vegetation should be grazed when it is at a height of 6-8 inches. Once the animals graze the vegetation down to a height of 3-4 inches, the animals should be removed to allow the pasture to rest and re-grow. These grazing heights provide optimal nutritional value and palatability for the animals along with growing conditions for the vegetation to remain healthy and vigorous. Adjustments to these grazing heights may be necessary depending on forage species and type of livestock. For example:

- Sheep may do better to begin grazing at a height of 4-6 inches.
- Horses prefer to graze pasture that is taller and higher in fiber.

To promote uniform and vigorous growth, pastures may need to be clipped or mowed periodically if forage is growing at rates that exceed the grazing rotation of the animals (two or three times each season).

To determine if you have adequate pasture to sustain the number of animals on your farm, use the stocking rate utilization examples on page 3 or contact your local Conservation District for assistance.

Livestock Yard:

A livestock yard is a smaller section of the field (usually located near a barn or homestead) where animals gather daily for many hours at a time, but where there isn't enough pasture to sustain them. This area is generally used for feeding, loafing, watering, exercising, resting, breeding, rearing, handling, and other production purposes, but is relatively small in comparison to the number of animals occupying it.

Livestock yards are often referred to as corrals, pens, feedlots, or paddocks. They should not be confused with a pasture that supplies part or all of an animal's forage requirements. Livestock yards can have both animal health and water quality risks, and should be located and managed properly to reduce mud, runoff, pollution and health risks. They can often be wet and muddy for much of the year due to frequent and sustained use by animals. Because they are subject to heavy traffic, they can cause soil compaction, increased runoff, air emissions and degraded plant resources. Livestock yards can be a source of concentrated animal waste, and are a potential source of continuous parasite infestation for animals.

If you have adequate pastureland:

Rotational grazing may be a great option for you. Divide your pasture into paddocks where the animals can be moved from one section to another. Note: the number of paddocks and how often you rotate will be based on a number of factors in addition to the amount of land versus animal units, including:

- The amount of effort you would like to expend to manage the paddocks
- Existing infrastructure, sufficient access to water, fencing, underlying forage condition and manure management

If you are interested in learning more about rotational grazing, or you would like to have a grazing plan written for your farm, the USDA NRCS or your local Conservation District can help! To get the most out of your farm, a rotational grazing plan will assess your natural resources, animals and infrastructure, and provide you with a comprehensive plan based on your goals and objectives. To learn more, contact the Northern RI Conservation District at 401-934-0840.



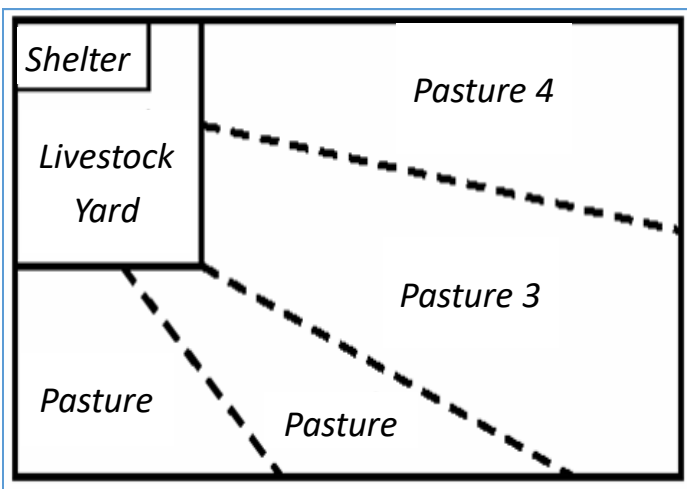
Photo Courtesy of USDA NRCS.



Photo Courtesy of USDA NRCS.

If you have limited pastureland:

- The main goal is to reduce overgrazing and allow pasture vegetation to have periods of time when it can rest and regrow. This is essential for any pasture that is being used as a primary food source.
- Allowing for some regrowth is especially important during hot, dry summer months (the “summer slump”) when pasture recovery can take as much as 36 to 40 days or more, depending on rainfall. During May and early June, a 14 to 20 day recovery time is typical.
- Consider splitting your pasture up into two or more paddocks that the animals can rotate between. If this is not feasible, consider removing them from the pasture for a few weeks at a time and keep them in a livestock yard. Also, consider limiting grazing time to a couple of hours each day.



Graphic courtesy of the University of New Hampshire Cooperative Extension.

Managing Manure:

- Establish more than one livestock yard and rotate your animals between them. This helps reduce mud and excessive manure loading.
- Feed animals in the barn and limit access to the pasture during wet, muddy conditions.

Note—increased confinement to barns and roofed areas will increase the amount of manure that needs to be collected and stored.

- Sand or wood chips can be used to create a mound or “dry spot” for animals to rest. Be sure that you do not create drainage problems, such as low spots where water collects. Both of these options require regular maintenance including periodic replenishment of materials.

Each livestock farm in the watershed can reduce its potential manure pollution risks. It is important to protect your well water and the Scituate Reservoir by understanding and identifying pollution risks from manure management practices. A management plan can be crafted to reduce these risks. **Fact Sheet 4: Self Assessment of Water Resources** will help you identify your farm’s specific water pollution risks.

Takeaways:

- Pasture and livestock yards are not the same
 - 1,000 lbs. = 1 animal unit =
 - 1-2 acres of land needed
- There are many farming practices you can use to overcome the challenges of grazing.

Resources:

Fact Sheets Series:

- Protecting Water: Fact Sheet 1
- Manure Management: Fact Sheet 2
- Pasture and Grazing: Fact Sheet 3
- Self Assessment of Water Resources: Fact Sheet 4
- Spreading Manure On-farm: Quick Tip

Additional resources, assistance, information and links are available online at www.nricd.org/manure under the “Healthy Farms, Healthy Watershed Program,” or call 401-934-0840.

For more information you can also contact the U.S Department of Agriculture, Natural Resource and Conservation Service (USDA NRCS)

<https://www.nrcs.usda.gov/wps/portal/nrcs/site/ri/home/>

OR

The University of Rhode Island (URI) Home*A*Syst Program

<https://web.uri.edu/safewater/>

These Fact Sheets were updated in partnership with the Northern Rhode Island Conservation District, University of Rhode Island, Providence Water Supply, State of Rhode Island Department of Environmental Management (RI DEM), Farm Fresh Rhode Island, and ESS Group.

The Healthy Farm, Healthy Watershed Project is supported by Southeast New England Program (SNEP) Watershed Grants.

SNEP Watershed Grants are funded by the U.S. Environmental Protection Agency (EPA) through a collaboration with Restore America’s Estuaries (RAE). For more on SNEP Watershed Grants, see www.snepgrants.org.

