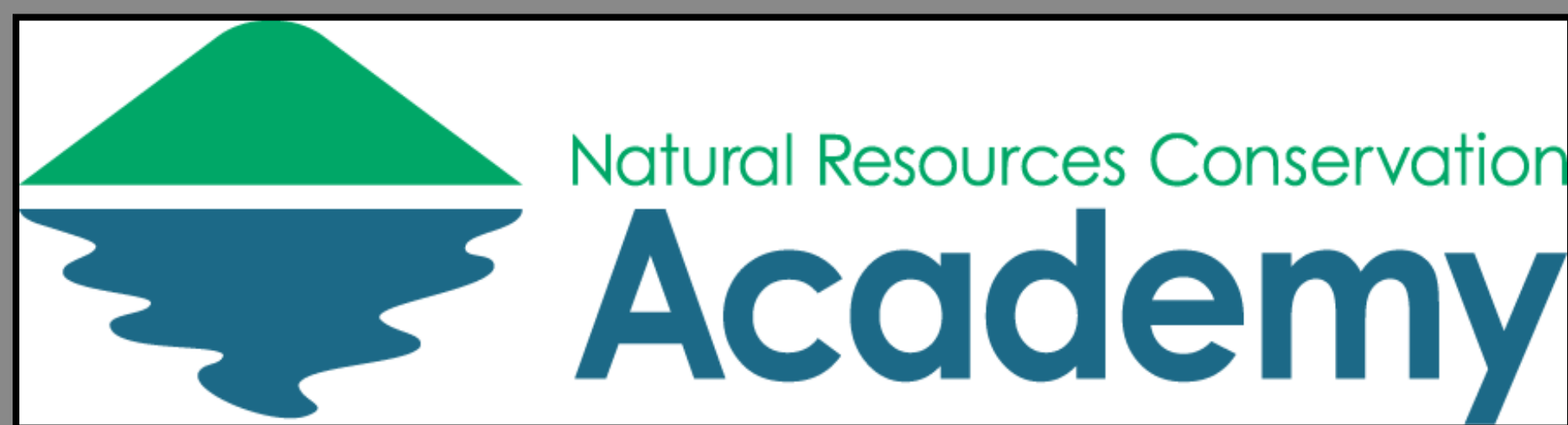


Grazing Management Plan for Woodchuck Lane



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Abstract

Grazing management plans are essential to farmers who graze animals. They provide organization as well as assistance in terms of how long an animal should stay in one spot before environmental damage is done to pastures. The whole purpose is to promote healthy soil, water and forage. Accordingly, the objective of this project was to create a grazing management plan for the Woodchuck Lane Farm, a farm that raises Scottish Highland Beef Cattle.

To develop the management plan, I started with a farm visit and talked with the owner to understand his intentions and goals for the farm. A resource evaluation was performed that looked at the following: setbacks from waterways, livestock health, shelter for livestock, soil quality and type of soils present, fencing, access to clean drinking water, and pasture plant health.

During the farm evaluation it was clear that there were not enough paddock areas for the cattle present. The farmer was rotating his cattle between three different paddocks, which were about a quarter acre in size. Due to the size of the paddocks the cattle were selective as to where they would graze, leaving the fields patchy with high grass and low grass. The grazing management plan allowed me to show the farmer how much grazing area and paddock sizes he should have for the amount of animals he would like to raise. This allows the farmer to keep a rotation schedule for the cattle assuring that they graze on the grass evenly, while allowing other pastures to recover leading to healthier soils and more productive pastures.

Introduction

“Privately owned range and pasture lands makes up over 27% (528 million acres) of the total acreage of the contiguous 48 states.”¹

A prescribed grazing plan is a customized management system where the farmer adjusts to intensity, frequency, timing, and duration of grazing.¹ Grazing animals can overgraze pastures causing erosion, poor plant productivity, and water quality issues.

Grazing plans are needed for:

- Water quality—animal manure can contaminate water sources with pathogens and chemicals from waste;
- Soil Health—reduce soil erosion and compaction;
- Plant Health—enhance pasture productivity by promoting desired species composition and plant communities; and
- Animal Health—animals that have access to quality forage tend to be healthier.

I put together a grazing management plan for Woodchuck Lane Farm, which raises Scottish Highland Beef Cattle. Although there were only 3 cattle, the farm had erosion and soil compaction issues as these animals require a large area and a lot of forage.



Fig 1. One of the Scottish Highland Cattle of Woodchuck Lane Farm. Her name is Jennie and she is pregnant.

Development of Management Plan

Farm Location and Description

- A grazing management plan was created for Woodchuck Lane Farm in Harwinton, CT (Fig. 2).
- It is in a rural area with surrounding farmlands nearby.

Procedure for Management Plan Development

- Landowners objective: Would like to increase herd size to 10 animals.
- At the time of the visit there were only 3 acres of pasture. However, more pasture is being created, with a goal of 13 acres.

Resource Evaluation:

- ☐ Look at aerial maps (before visit) for potential resource concerns, such as the presence of water bodies, rare, threatened or endangered species, cultural resources that may be effected.
- ☐ Inventory soil types – erodible/sandy/loam/clay/etc.
- ☐ Soil quality report (Fig. 2).
- ☐ I looked at the distance of the pastures from water bodies – it is important to have a vegetated buffer around water bodies to reduce pathogens and erosion from entering water courses.
- ☐ Documentation of where manure was stored.
- ☐ Located drinking wells on the property to prevent well water contamination.
- ☐ Livestock shelter during the winter – environmental benefits to animals being confined inside means less chance for pathogens and sedimentation to runoff the land. Also, keeps pastures healthy by not making them muddy.
- ☐ Pasture plant productivity and health.
- ☐ Soil compaction using a soil penetrometer.
- ☐ Fencing quality.
- ☐ Livestock access to clean drinking water.
- ☐ Livestock feed and forage.

Fig 2. Soil analysis on Woodchuck Lane. (Left) Soil quality report that shows the different types of soils that are on the Woodchuck Lane Farm. Notice the map unit symbols and where they are located. (Right) Map of the farm. Map unit 45B (Woodbridge fine sandy loam) occupies the majority of the farm.

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|-----------------------------|---|--------------|----------------|
| 2 | Ridgebury fine sandy loam | 0.0 | 0.4% |
| 3 | Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony | 0.4 | 12.3% |
| 45B | Woodbridge fine sandy loam, 3 to 8 percent slopes | 1.5 | 43.4% |
| 47C | Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony | 0.1 | 2.1% |
| 84B | Paxton and Montauk fine sandy loams, 3 to 8 percent slopes | 1.5 | 41.9% |
| Totals for Area of Interest | | 3.5 | 100.0% |



Soil Importance

Soil is an important factor in the environment. Soil is home to many different micro-organisms as well as animals.² Without soil we would not be able to grow crops for food or feed animals. Trees would not be able to grow, meaning we would not have any oxygen. Our water supply would be contaminated. Even the production of the houses of today would not be possible without soil. To put it in perspective, soil is what is keeping humanity alive.

Description of Management Plan

Fig 3. Grazing management plan on a excel spreadsheet. Field-collected data are inputted into the spreadsheet and automatic calculations are conducted to determine factors such as paddock size, resting days for each paddock per month, along with the how many acres needed per month.

| | |
|--|---------------|
| 5- Enter the type of grazing livestock: | Beef (Feeder) |
| 6- Enter the Number of grazing livestock: | 10 |
| 7- Enter total acres available and planned for grazing: | 13.0 |
| Dietary Data: | |
| 8- Enter average body weight of grazing livestock: | 950 |
| 9- Enter estimated Dry Matter Intake (DMI) as a % of body weight | 3.0 |
| 10- Calculate Daily DMI for a single animal: (8 X 9) | 28.5 |
| 11- Calculate Daily DMI for the herd: (6) X (10) | 285.0 |
| Grazing Data: | |
| 12- Enter length of desired grazing period in days: | 4.0 |
| 13- Enter estimated available forage dry matter in pounds per acre: | 1,800 |
| 14- Calculate estimated paddock size: $[(11) / (13)] X (12)$ | 0.6 |
| 15a- Enter Estimated paddock recovery period days: | 42 |
| <i>Note: 42 days rest period is the default for September.</i> | |
| 15b- Calculate estimated number of paddocks needed: $[(15a) / (12)] + 1$ | 12 |
| 16- Calculate total acres needed for grazing: $(14) / (15b)$ | 7.3 |

Fig 4. Rotation schedule displaying the plan for the grazing management of Woodchuck Lane, which states the size each paddock should be as well as the rest days for each paddock in each month. Differences for each month are because of differences in weather.

| MONTHS | ESTIMATED REST DAYS | ESTIMATED NUMBER OF PADDOCKS NEEDED | ESTIMATED NUMBER OF ACRES NEEDED |
|-----------|---------------------|-------------------------------------|----------------------------------|
| April | 15 | 5 | 3 |
| May | 18 | 6 | 3.5 |
| June | 24 | 7 | 4.4 |
| July | 30 | 9 | 5.4 |
| August | 36 | 10 | 6.3 |
| September | 42 | 12 | 7.3 |

Importance of Grazing Management Plans

A grazing management plan does not just benefit the animals, it benefits everyone.

- **The Owner:**
 - Shows the sustainability of their farm.
 - Gives them an organized system that benefits their farms.
 - Saves money by growing feed for their animals instead of buying it.
- **The Community:**
 - Better quality product.
 - More local foods.
 - Healthier environment – clean water, healthy soils, clean air.
- **The Animals:**
 - Healthier.
 - Gives them better quality forage to eat.

Acknowledgements

Working on this project has given me the opportunity to do a couple of things such as, visit numerous farms and be very close to many animals. I would like to thank Petra, my community partner, for being an amazing guide, answering my many questions when needed, and giving me the opportunity to come with her on her sites to get the idea of these farms. Along with the staff at NRCS-Torrington for allowing me to work in their center and for being so welcoming.

References

1. <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/angepasture/>
2. <http://www.srh.org.uk/publications/soil/soilandlandcare/soilimportant.asp>