

Animal Enhancement Activity - ANM30 – Ultra high density grazing system to improve soil quality



Enhancement Description

This enhancement is for the management of grazing acreages using high stock densities, also known as “mob grazing”. This management style utilizes short grazing periods, and then long rest periods giving plants ample time for full regrowth.

Land Use Applicability

Pastureland, rangeland and forestland.

Benefits

Following an high density grazing system improves soil quality in the following ways under some conditions; the trampling of vegetation, uniform manure distribution and additional litter accelerates microbe activity, increases soil organic matter and water infiltration. In addition the plant community benefits through increased root fibers and forage diversity resulting in drought resistant pastures and more diversity in the forage. The extended periods of rest between grazing periods improves wildlife habitat

Criteria

State will determine those site condition in which this enhancement is not applicability and could result in negative environmental impact.

High stock density will be used to improve the acreage being grazed. This will be accomplished by

- Increasing stock density to a level that achieves trampling, manure distribution and forage consumption to a level that improves soil health and plant diversity.
 - Stock density rates should be a minimum of 50,000 lbs. per acre for 75% of the grazing season to achieve the desired animal impact.
 - Adequate plant recovery periods are provided after grazing with each acre not being grazed before the plants are fully recovered.
 - Grazing periods should be no longer than 1 day (24 hours) or less.
 - Livestock should be removed after 50% to 60% of available forage has been consumed.
 - Soil cover is maintained at 100% following grazing activity
 - Maintaining a minimum of 10% standing residue after grazing helps insure adequate animal performance

Documentation Requirements

1. Provide a written grazing plan that includes:



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- Stocking rate each month for the area to be grazed, including kind, number, class and average weights for each class.
 - Stocking density to be used (lbs. /ac.).
 - Size, number, and location of paddocks
 - Estimate grazing period (hours) for each paddock
 - Dates paddock were grazed
 - Notes that document grazing impact on paddock, e.g. forage utilization as light to heavy, percent of ground cover and standing residue.
2. Representative photographs
 3. Map showing layout and size of fields paddocks.

NRCS Pasture Notes, graziers notebooks, or other record keeping systems for pasture livestock operations can be used to facilitate planning and record-keeping.

Michigan Supplement

Animal Enhancement Activity- ANM30- Ultra High Density Grazing System to Improve Soil Quality

State Criteria

This enhancement activity applies to beef operations only.

- Herds used for ultra high density grazing should be of uniform body weight.
- This enhancement activity is to be applied following a prescribed grazing schedule anytime during the months of May through August.
- Gully, sheet and rill erosion must be controlled or stabilized.
- Livestock drinking water is provided by a tank or trough or at a stabilized controlled access surface water location.

This enhancement activity is NOT applicable under the following conditions:

- Pasture condition score overall is below 25.
- Live plant canopy cover is less than 75% or MI Pasture Stick grid shows 3 or more dots.
- Live plant basal area covers less than 35% of the soil surface.
- Pasture/paddock slopes > 6%.
- Wind erodibility index (I) for the soil type is > 86.
- Woodlot or forest grazing.
- Hydric soils when soil moisture content is too wet and stock hooves punch into the soil surface.
- Stocking density rate is < 50,000 pounds per acre or >72,500 pounds per acre.

Increase stock density

Stock density rates should be a minimum of 50,000 lbs per acre for 75% of the growing season. To calculate the density rate and acres needed, follow the next 5 steps:

1. Determine the amount of grazeable forage available by measuring the overall height of the plants and using the grid on the MI Pasture Stick to indicate the pounds per acre per inch of plant height by dominant forage species present. Subtract 3 inches from the overall measure height and multiply by the value found on the pasture stick based on the number of grid dots visible. Alternatively, use the value of 200 pounds per acre per inch and select a plant height from **Table 1** to determine the total pounds of forage available. Record total forage available per acre in the second blank of step 3.

Calculate the amount of forage the herd will need per day. Use a dry matter intake value of 2.5% of the live body weight of the animal. Record total forage need in the first blank of step 3. The formula is:

Average Weight of animal * 0.025 * number of head= total forage needed per day

_____ * 0.025* _____ = _____ pounds/day

2. Divide the total pounds of forage available by the total pounds of forage needed to get the number of acres needed to graze for 1 day.

Total pounds forage needed per day / total pounds of forage available= acres needed

_____ / _____ = acres needed for 1 day grazing
(from step 2) (from step 1)

3. Stocking density rate is calculated as the herd weight divided by acres grazed:

(number of head * average weight in pounds) / acres to be grazed in 1 day

(_____ * _____) / _____ = Stocking density rate
(from step 3)

4. Stocking Density Rate calculated in the step above must be at least 50,000 pounds and no more than 72,500 pounds. If not, recalculate using new herd numbers. Table 2 provides additional information on acreage needed as a quick reference when planning for changing mob herd weights or multiple herds.

Table 1. Total Pounds Per Acre of Available Forage By Plant Height and Density

| Plant Height in inches | Estimated pounds by Plant Density | Estimated pounds by Plant Density |
|------------------------|--------------------------------------|--------------------------------------|
| | 200 | 250 |
| 18 | 3000 | 3750 |
| 16 | 2600 | 3250 |
| 14 | 2200 | 2750 |
| 12 | 1800 | 2250 |
| 10 | 1400 | 1750 |
| 8 | 1000 | 1250 |

Table 2. Mob Weight and Acres Needed to Achieve Stocking Density Rate Of 50,000 Pounds Minimum and No More Than 72,000 Pounds Maximum Per Acre.

| Mob Weight in Pounds | 1 acre or less | 1.1 to 2 acres |
|-----------------------------|-----------------------|-----------------------|
| 50,000 | 0.7 to 1 acre | NA |
| 55,000 | 0.8 to 1 acre | 1.1 acre max |
| 60,000 | Minimum 0.9 acre | 1.2 acre max |
| 65,000 | 1 acre | 1.3 acre max |
| 70,000 | 1 acre | 1.4 acre max |
| 75,000 | NA | 1.5 acre max |
| 80,000 | NA | 1.2 to 1.6 acre |
| 85,000 | NA | 1.2 to 1.7 acre |
| 90,000 | NA | 1.3 to 1.8 acre |
| 100,000 | NA | 1.4 to 2 acre |