United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E528G

CONSERVATION STEWARDSHIP PROGRAM

Improved grazing management on pasture for plant productivity and health with monitoring activities

CONSERVATION PRACTICE: 528 - Prescribed Grazing

APPLICABLE LAND USE: Pasture

RESOURCE CONCERN: Plants

ENHANCEMENT LIFE SPAN: 1 years

Enhancement Description

Managing the harvest of vegetation with grazing and/or browsing animals as adjusted when following recommendations of a qualifying professional, as detailed in the enhancement criteria, generated through Pasture Condition Scoring (PCS).

Criteria

- A written plan for matching the forage quantity and quality produced with the grazing and/or browsing demand will be followed.
- Removal of herbage will be in accordance with site production limitations, rate of plant growth, the physiological needs of forage plants, and the nutritional needs of the animals.
- Adjust intensity, frequency, timing, and duration of grazing and/or browsing (providing sufficient recovery time to meet planned, written objectives) to meet the desired objectives for the plant communities and associated resources.
- Deferment (non-grazing period less than one year) and/or rest (non-grazing period equal or greater than one year) will be planned for critical periods of plant needs (such as post-planting or renovation, severe drought, etc.).
- Manage grazing and/or browsing animals to maintain adequate cover on sensitive areas (such as riparian areas, wetlands, habitats of concern, karst areas, etc.)

- Manage livestock movements based on rate of plant growth, available forage, and allowable utilization target. Develop and follow contingency plans to deal with episodic disturbance events.

- The narrative management recommendations and implementation for duration and intensity of grazing and/or browsing will be based on the desired plant health and productivity objectives.

- Perform a soils test on the applicable acres for organic matter and nutrient analysis through a land grant university or accredited lab.

- Apply fertilizer and/or soil amendments according to a current soil test when plant vigor needs improvement.

- Follow guidelines provided by a Certified Forage and Grassland Professional, Certified Range Management Consultant, or Certified Professional in Range Management, NRCS Technical Service Provider approved for a DIA 159, or a non-affiliated consultant with a bachelor or higher level degree in agronomy, range science or other closely-related plant science discipline and a minimum of five years' experience in pastureland conservation planning, monitoring, and consulting regarding use of pastureland improvement practices generated through the Pasture Condition Scoring (PCS) assessment tool.

Documentation and Implementation Requirements

Participant will:

☐ Prior to implementation, acquire a Grazing Management Plan with all the following components (provide plan to NRCS for review and approval):
  - Producer goals, objectives, and resource concerns
  - Location and condition of structural improvements
  - Watering sites with availability, quantity, and quality
  - Forage inventory
  - Forage-animal balance sheet
  - Grazing plan for livestock movement
  - Contingency plan
  - Monitoring plan

☐ During implementation, perform a soil test on the applicable acres.

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- ☐ During implementation, secure a Certified Forage and Grassland Professional, Certified Range Management Consultant, Certified Professional in Range Management, NRCS Technical Service Provider approved for DIA 159, or a non-affiliated consultant with a bachelor or higher level degree in agronomy, range science or other closely-related plant science discipline and a minimum of five years' experience in pastureland conservation planning, monitoring, and consulting regarding use of pastureland improvement practices to:
  1) Select a monitoring site in each forage type or forage mixture on the enrolled acreage to assess with the Pasture Condition Scoring tool.
  2) Conduct assessments on those sites using the Pasture Condition Scoring tool and document the location.
  3) Develop a written recommendation including duration and intensity of grazing and/or browsing based on desired health and productivity objectives while addressing adequate cover, litter, and canopy to maintain or improve infiltration, soil health and reduce soil compaction and other resource concerns identified during the Pasture Condition Score (PCS) assessment.

- ☐ During implementation, identify key grazing areas and key forage species and monitor pastures for grazing utilization.

- ☐ During implementation, keep pasture/herd in/out records.

- ☐ During implementation, complete forage utilization job sheet at the end of the grazing season for NRCS Conservation Practice Standard Prescribed Grazing (528).

- ☐ During implementation, document adjustments needed to maintain feed and forage balance.

- ☐ After implementation, provide the following items for review by NRCS:
  - Pasture Condition Score Sheets with all field notes and locations.
  - Soil test analysis.
  - Written documentation from professional with recommendations and follow up actions.
  - Pasture/herd in/out dates.
  - Completed forage utilization job sheet.
  - Animal/forage balance sheet.
  - Written modifications to the grazing management and monitoring plan which address the resource concerns identified from the assessment.

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NRCS will:

- ☐ As needed, provide technical additional assistance to participant as requested.
- ☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Prescribed Grazing (CPS 528) as it relates to implementing this enhancement, including forage utilization job sheet.
- ☐ Prior to implementation, provide soils information and/ or Forage Suitability Groups as requested.
- ☐ After implementation, review all Pasture Condition Score sheets and written recommendations made by professional.
- ☐ After implementation, review soil test analysis.
- ☐ After implementation, verify implementation of the grazing management plan by reviewing grazing/herd in/out records, forage utilization job sheet, animal/forage balance records and changes made to the plan to address resource concerns identified during the Pasture Condition Scoring assessments.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

_____ _____

NRCS Technical Adequacy Signature Date

ALABAMA – E528G Supplement- Improved grazing management on pasture for plant productivity and health through monitoring activities

Requirements:

1. Written conservation plan that includes producer goals, objectives and resource concerns. Plan map will show and label all fences, feeding/watering areas, and sensitive areas. Livestock should be restricted from sensitive areas.

2. Average annual livestock dry matter needs will be balanced with available forage without deficiency for the yearly summary. The Forage/Animal Balance Worksheet will be completed to document.

3. Livestock will be rotated between at least 3 pastures in a particular functional-group (e.g. warm season pastures or cool season pastures) to facilitate prescribed grazing. Fences and water sources should be in place so that trails do not occur and concentrated livestock areas are minimized. Starting and ending grazing periods will meet the guidelines in the table below. Pastures will be sized and stocked to facilitate meeting the requirements for grazing heights and resting periods. It is anticipated that with a three-pasture rotation that each pasture would rest about 66 percent of the grazing cycle. Additional pastures are preferred and will enable more forage rest.

4. A contingency plan will be developed denoting the use of sacrifice areas for pasture management during drought or other weather-related events. These areas will be labeled on the conservation plan map.

5. A monitoring site will be selected in each forage type or forage mixture to be evaluated with the Pasture Condition Scoring (PCS) tool **quarterly** (typically, March or April, June or July, September or October, December or January). Sites should be reflective of average conditions of the pasture and labeled on the plan map. Photographs are required at the time of monitoring. The PCS should note whether forages are being actively grazed or in a rest period.

6. Perform a soil test annually for each field with different soils and/or management and apply lime and fertilizer according to soil test results. If manure or by-products are applied, follow Phosphorus Index and Nitrogen Leaching Index limitations according to the Nutrient Management Standard (590).

7. Maintain grazing records to include pasture or field number, acres, forage type, animal type and number, forage height in and out-with dates. Records should be submitted quarterly along with the Pasture Condition Score.

Grazing will be managed according to the Prescribed Grazing (528) Standard.
The days of rest needed for plant recovery and regrowth range from 7 to 45 days, depending on the forage species (see below table). Stocking rates and growing conditions can also affect the forage growth. Grazing systems should be designed to meet the rest requirements of a specific forage as well as the needs of the livestock. For example, by using four pastures with 14 days of grazing per pasture, the grazing cycle is 56 days and each pasture rests 75% of the time or 42 days.

FORAGE GUIDELINES FOR PRESCRIBED GRAZING SYSTEMS

Common Forages	Begin Grazing (in)	End Grazing (in)	Usual days of Rest
Alfalfa grazing types	10	4	35 - 40
Bahiagrass	6	2	10 - 20
Bermudagrass common	5	2	7 - 10
Bermudagrass hybrid	6	3	7 - 10
Big Bluestem	18	10	30 - 45
Dallisgrass	6	3	7 - 15
Eastern Gamagrass	15	8	30 - 45
Tall Fescue	6	3	15 - 30
Indiangrass	12	6	30 - 40
Orchardgrass	8	3	15 - 30
Switchgrass	18	10	30 - 45

Grazing Management Records

Keeping accurate records is a continual and critical process in effective pasture and livestock management.

Pasture ID		Pasture acres		Forage type			
Soil test date		Lime/ Fertilizer rate		Lime/ Fertilizer type		Date applied	

Livestock		Date in	Forage height	Date out	Forage height	Notes (fertilizer applied)
Type	Number					

Pasture ID		Pasture acres		Forage type			
Soil test date		Lime/ Fertilizer rate		Lime/ Fertilizer type		Date applied	

Livestock		Date in	Forage height	Date out	Forage height	Notes (fertilizer applied)
Type	Number					

U.S. Department of Agriculture
Natural Resources Conservation Service

Pasture Condition Score Sheet

Operator:				**Date:**	
Evaluator:				**Pasture ID:**	
Soil(s), ESD(s) and or FSG(s):				**Livestock type:**	
Current Season's Precipitation (check one)	Above Normal ◦	Normal ◦	Below Normal ◦		
Seasonal Temperature Trend (check one)	Above Normal ◦	Normal ◦	Below Normal ◦		

Evaluate the site and rate each indicator based upon your observations. Scores for each indicator may range from 1 to 5. Sum the indicator scores to determine overall pasture condition score. **Score**

Indicator	1 Point	2 Points	3 Points	4 Points	5 Points	Points
Percent Desirable Plants* (Dry Weight; for Livestock Type)	Desirable species <20% of stand.	Desirable species 20 – 40% of stand.	Desirable species 41 – 60% of stand.	Desirable species 61 – 80% of stand.	Desirable species exceed 80% of stand.	
Percent Legume by Dry Weight	<5% **OR** >50% bloating legumes.	5-10% legumes **OR** >40% bloating legume.	11-20% legumes.	21-30% legumes.	31-40% legumes. No grass loss; grass may be increasing.	
Live (includes dormant) Plant Cover	Less than 40% is live leaf canopy. Remaining is either dead standing material, or bare ground.	40-65% is live leaf canopy. Remaining is either dead standing material, or bare ground.	66-80% live leaf canopy. Remaining is either dead standing material, or bare ground.	81-95% live leaf canopy. Remaining is either dead standing material, or bare ground.	More than 95% live (non-dormant) leaf canopy. Remaining is either dead standing material, or bare ground.	
Plant Diversity by Dry Weight (*See footnote at bottom of page)	**Diversity:** Very low	**Diversity**: Low	**Diversity:** Moderate	**Diversity:** High	**Diversity:** Very high	
	<50% desirable species **OR** 1 dominant desirable species in 1functional group **OR** No dominant desirable species and all minor species in each functional group totaling <15%	2 dominant desirable species in 1functional group **OR** 2 functional groups each represented by minor speciestotaling ≥15%	3 dominant desirable species in 1functional group **OR** 2-3 dominant desirable species in 2 functional groups **OR** 3 functional groups each represented by minor speciestotaling ≥15%	4 dominant desirable species in 2functional groups **OR** 3 dominant desirable species in 3functional groups **OR** 3 dominant desirable species in 2functional groups **AND** 1 additional functional group represented by minor species totaling ≥15%	4 dominant desirable species in 3functional groups **OR** 4 dominant desirable species in 2functional groups **AND** 1 additional functional group represented by minor species totaling ≥15%	
Plant Residue and Litter as Soil Cover (*Pull back canopy*)	Bare soil is very easily seen;	Openings of bare soil can be seen fairly easily;	Small openings of bare soil can be seen, but minimal;	No bare soil is easily seen;	No bare soil is seen;	
	There is <20% cover on the soil surface or it is excessive, and slow to break down.	Soil cover is 21-40%.	Soil cover is 41-60%.	Soil cover is 61-80%.	Soil cover is >80% with good biological activity and decomposition of older residue.	
Grazing Utilization and Severity	Pasture is overgrazed throughout.	Pasture consists primarily of overgrazed and/or refused areas (former dung areas, older plants, undesired plants).	Pastures show uneven grazing throughout with heavier grazing near water or feeding areas, or distinct zone grazing.	Pasture grazed evenly throughout with minimal overgrazing with some under grazed small areas and heavier use near water sources.	Pasture grazed evenly throughout with no overgrazing.	

*Use NRCS plant list for livestock species. Functional groups are as appropriate for your state (cool-season grasses, legumes, warm-season grasses, non-leguminous forbs). Any time there are more undesirables than desirables, it will be 1 point. Desirable species must total more than 50% of the total biomass. Dominant species are ≥15%. Functional groups must be ≥15% of stand to be counted.

Indicator	1 Point	2 Points	3 Points	4 Points	5 Points	Points

Livestock Concentration Areas (If field <1 acre, see ** footnote)	Livestock concentration areas are within 100 feet of, or are a direct conveyance to surface water, and cover more than 0.1 acre, including trails.	Livestock concentration areas are within 100 feet of, or are a direct conveyance to surface water, and cover less than 0.1 acre, including trails.	Livestock concentration areas are farther than 100 feet from and are not a direct conveyance to surface water, and cover more than 0.1 acre, including trails.	Livestock concentration areas are farther than 100 feet and are not a direct conveyance to surface water, and cover less than 0.1 acre, including trails.	Livestock concentration areas, including trails, not present.
Soil Compaction and Soil Regenerative Features (***See footnote at bottom of page)	**Compaction:** Dense or thick platy layer very distinct;	**Compaction:** Dense or moderate platy layer noticeable;	**Compaction:** Thin dense or platy layer still present;	**Compaction:** Minor dense or platy layer; good aggregates common (crumbly soil);	**Compaction:** No dense or platy layers; crumbly soil throughout;
	Roots: Dominantly horizontal; most shallow/sparse;	**Roots:** Numerous horizontal; moderate amount shallow/sparse;	**Roots:** Some horizontal with increasing downward;	**Roots:** Few horizontal, more downward through the soil profile;	**Roots:** Abundant growth primarily downward through the soil profile;
	Color: Surface horizon same as subsoil;		**Color:** Surface horizon moderately darker than subsoil;		**Color:** Surface horizon dramatically darker than subsoil;
	Soil Life: Few or no signs.	**Soil Life:** Signs scattered in surface layer.	**Soil Life:** Signs scattered throughout.	**Soil Life:** Signs numerous throughout.	**Soil Life:** Signs abundant throughout.
Plant Vigor	No plant recovery after grazing/harvest. Pale, yellow or brown, or severe stunting of desirable forage.	Some recovery. Yellowish green forage, or moderately or slight stunting of desirable forage.	Adequate recovery of desirable forage. Yellowish and dark green areas due to manure and urine patches.	Good recovery of desirable forage. Light green and dark green foragepresent.	Rapid recovery of desirable forage. All healthy greenforage.
Erosion (Circle all that apply; the overall indicator score will be the lowest rating indicated)	**Sheet and Rill:** Plant density is insufficient to stop runoff, with poor infiltration. Erosion easily visible throughout pasture;	**Sheet and Rill:** Plant density slows runoff. Erosion present and easily seen on steeper terrain;	**Sheet and Rill:** Plant density good and runoff moderate. If present, erosion concentrated on heavily used areas;	**Sheet and Rill:** Plant density high, runoff low, good infiltration. May have evidence of past erosion if present;	**Sheet and Rill:** Plant density high, no runoff, good infiltration. No evidence of present or past erosion;
	Wind: Severescoured areas and deposition throughout;	**Wind:** Scoured areas common, deposition effecting plants;	**Wind:** Occasional scoured areas, litter windrolled;	**Wind:** Minimal soil exposed, some detatched vegetation windrolled, minor plant damage;	**Wind:** No exposed soil;
	Streambank and/or Shoreline: Banks bare, major sloughing, no bank vegetation;	**Streambank and/or Shoreline:** More than half the bank vegetation trampled; sloughing.	**Streambank and/or Shoreline:** Less than half the bank vegetation trampled; eroding at crossing/entrances.	**Streambank and/or Shoreline:** Eroding at crossings, entrances; all the bank vegetation is intact and banks are stable.	**Streambank and/or Shoreline: V**egetation intact and stable, hardened crossings and alternative water sources used;
	Gully: Very large mass movement, caving sides.	**Gully:** Advancing upslope, increasing fingering extensions.	**Gully:** Not all active but extensions present.	**Gully:** Stable with vegetative cover.	**Gully:** None, drainage ways vegetative.

** If field size is less than 1 ac. Use 10% of field size in place of 0.1 acre. ***Use a shovel. Root and Compaction subindicators are primary and should be considered first. Soil color and soil life are secondary subindicators which can be considered where applicable.

Overall Pasture Condition Score	Individual Indicator Score	Management Change Suggested
45 to 50	5	No changes in management needed at this time.
35 to 45	4	Minor changes would enhance, do most beneficial first.
25 to 35	3	Improvements would benefit productivity and/or environment.
15 to 25	2	Needs immediate management changes, high return likely.
10 to 15	1	Major effort required in time, management and expense.

Overall Pasture Condition Score =

Comments/Notes: