USDA United States Department of Agriculture

Minnesota Ecological Science Job Approval Authority Fact Sheet

Grazing Management (528)

DEFINITION:

Managing the harvest of vegetation with grazing and/or browsing animals.

ESJAA INFORMATION:

Job Classes	Control Factors			
	Number of Vegetation Types / Number of Pastures / Scope (Number of Herds)	Grazing Method	Operational Size (Acres)	Livestock Type
Job Class I	1 Vegetation Type / ≤ 4 Pastures / 1 Herd	Seasonal/Rotational	< 100	Beef Cattle
Job Class II	≤ 2 Vegetation Types / ≤ 7 Pastures / ≤ 3 Herds	Seasonal/Rotational and/or Strip Grazing Methods	< 300	Beef Cattle
Job Class III	≤ 4 Vegetation Types / ≤ 12 Pastures / ≤ 5 Herds/ Wetland or wet meadow	Seasonal/Rotational, Strip Grazing, and/or Multi-Species (Livestock)	< 700	All
Job Class IV	≤ 6 Vegetation Types / ≤ 15 Pastures / ≤ 6 Herds	Seasonal/Rotational, Strip Grazing, Multi-Species Livestock and/or HILF	< 2,000	All
Job Class V	Unlimited/ Noxious Invasive Species/ Native Grasses or Prairie Vegetation/Annuals	Unlimited/ Biological Control	Unlimited	All

CONTROL FACTORS:

Based on the Vegetation Types (defined below), Complexity Factor (Pastures), Scope (Number of Herds), Grazing Method (defined below), Complexity due to Operational Size (acreage) and livestock type. PASTURELAND ONLY.

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Vegetation Types

1. Introduced Grasses/legumes.
2. Wooded pastures (greater than 50% tree canopy cover).
3. Wetlands/wet meadows (requires a Job Class III).
4. Noxious invasive species (requires a Job Class V).
5. Native grasses/prairie vegetation (requires a Job Class V).
6. Annual Forages (requires a Job Class V).

Grazing Method

- **Seasonal:** Summer grazing season, which starts in May and goes through the end of October or early November.
- **Rotational:** Multi-paddock grazing systems.
- **Strip-grazing:** Using temporary fencing to further subdivide pastures into smaller paddocks.
- **Multi-species livestock:** More than one type of livestock grazing in the system (ex. Sheep and cattle grazing together).
- **High Intensity, Low Frequency (HILF):** Grazing management tool consisting of high stock density, short duration grazing with long rest periods to achieve landscape focused objectives. Stock density is generally > 100,000 pounds of live weight/acre, duration generally < 1 day, and rest periods generally 60 days or longer.
- **Biological Control:** Grazing management tool used to manage unacceptable levels of invasive, prohibited, or noxious plants in farmsteads, pastures, and rangeland to promote desirable plant growth and plant communities. When Biological Control is the main purpose to the grazing management plan, a Job Class V is required.
- **Unlimited (Job Class V): Grazing Management utilizing Virtual Fence:** Virtual fencing is an adaptive livestock management tool that allows for the control and movement of livestock without physical fences. Virtual fencing involves installing a GPS Collar onto livestock that emit audio stimuli followed by a benign electrical pulse when they approach the fence border.

KNOWLEDGE SKILLS AND ABILITIES (KSAs):

1. Knowledge of ecological processes and implications for specific rangeland ecological sites, forage suitability groups, and/or forest ecological sites in the area of service.
2. Skill in development of grazing management plans that are practical, address resource concerns, and meet manager's objectives.
3. Ability to monitor landscapes and communicate needed adjustments.
4. Skill to complete grazing resource inventory with a producer on their farm or ranch, which includes a map locating existing fences, watering system, forages, sensitive features, and livestock handling facilities.
5. ESJAA/ENJAA for planning for any facilitating practices that are included within the grazing management system.

ADDITIONAL KSAs BASED ON PRACTICE PHASES:

Minnesota Guidance: Award the same JAA for the "I&E Planning" and "Design and Development of Conservation Practice Requirements" phases. JAA for Installation, oversight and certification may be awarded separately.

Inventory and Evaluation (I&E) Planning

Job Classes I

- Read and understand the conservation practice standard, implementation requirements, and statement of work.
- Knowledge of CRP grazing regulations and opportunities (emergency, non-emergency, routine, incidental).

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Job Class II-IV

- Read and understand Minnesota Agronomy Technical Note 11: Grazing Systems Planning Guide.
- Ability to collect resource inventory data to document existing resource conditions/concerns, identify opportunities to improve resource conditions, and identify location/condition of existing infrastructure.
- Knowledge, skills, and ability to complete the Pasture Condition Score assessment.
- Use tools such as Web Soil Survey, plant inventories, and producer records to estimate pasture production.
- Ability to estimate forage availability in the field through clipping and weighing and by using a grazing stick.
- Ability to determine percent legume (DM weight) in the stand.
- Knowledge to determine climatic stresses such as drought and frost.
- Identify environmentally sensitive areas and create strategies to successfully manage them to reduce or eliminate damage.
- Ability to identity livestock trails, erosion: sheet & rill, streambank, and gully.
- Skills in seed, seedling and plant identification of common introduced forage plants, such as smooth brome, meadow brome, timothy, orchardgrass, tall fescue, reed canarygrass, bluegrass, redtop, quackgrass, alfalfa, red clover, white clover, birdsfoot trefoil, etc.
- Knowledge of Minnesota Noxious Weed Law.
- Ability to identify common weed species associated with pasture land including: dandelion, curly dock, thistle species, foxtail, leafy spurge, spotted knapweed, common tansy, oxeye daisy, etc.
- Knowledge to determine the number and weight of each class of livestock.
- Knowledge of operation and maintenance for vegetative establishment.
- Knowledge of operation and maintenance of grazing management.
- Ability to plan the following conservation practices as needed to help facilitate implementation of grazing management: Access Control (472), Annual Forages for Grazing Systems (810), Brush Management (314), Cover Crops (340), Fence (382), Heavy Use Area Protection (561), Herbaceous Weed Treatment (315), Livestock Pipeline (516), Pasture and Hayland Planting (512), Pumping Plant (533), Silvopasture (381), Stream Crossing (578), Trails and Walkways (575), Water Well (642), Watering Facility (614) as well as any other practice that may be needed.
- Ability to obtain the necessary training to develop grazing management plans.

Job Class V

- Knowledge of grazing management strategies to control noxious and invasive species.
- Knowledge of grazing and rangeland management strategies to properly manage native and restored prairie vegetation found in grazing lands.
- Skills in seed, seedling and plant identification of common native grasses and forbs, such as big bluestem, little bluestem, Indiangrass, sideoats grama, switchgrass, Canada wildrye, western wheatgrass, slender wheatgrass, purple prairie clover, white prairie clover, Canada milkvetch, maximilian sunflower, etc.
- Knowledge of annual forage species, including forage characteristics, growth characteristics, forage quality, proper planting timing, and proper establishment.
- Knowledge of virtual fence technology and how it works.
- Knowledge of the proper use, installation, and maintenance of virtual fence technology.
- Knowledge of livestock types and classes that are compatible with virtual fence.
- Ability to discuss pros and cons of virtual fencing and compare various fence types (including costs) with producers to assist them with deciding what type of fence best fits their operation.

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Design and development of conservation practice requirements

Job Class I

- Ability to successfully complete the CRP Emergency Haying and Grazing IR, CRP Non-Emergency Grazing IR, and the Non-Emergency Incidental Grazing IR.

Job Class II

- Ability to develop grazing management plans and complete the Grazing Management Plan template available in section IV of the eFOTG.
- Knowledge, Skill, and Ability to complete the Forage Balance Sheet available in section IV of the eFOTG.
- Skill and Ability to successfully subdivide pastures based on expected pasture productivity, livestock need, soil types, slope, aspect, landscape obstacles (such as ravines, wetlands, and heavily wooded areas), and the types of vegetation present.
- Develop a livestock watering system plan as needed that meets the water consumption needs of the kind, class and weight of livestock while improving grazing efficiency and nutrient distribution.
- Ability to develop contingency plans for potential management issues that may arise due to natural events, such as drought, flooding, insects, etc.
- Ability to develop monitoring plans that assess whether the grazing management plan is meeting the goals and objectives of the plan.
- Ability to design the following ECS conservation practices as needed to help facilitate implementation of grazing management: Access Control (472), Annual Forages for Grazing Systems (810), Brush Management (314), Cover Crops (340), Fence (382), Herbaceous Weed Treatment (315), Pasture and Hayland Planting (512), Silvopasture (381), as well other practice that may be needed.
- Ability to successfully complete the CRP Emergency Haying and Grazing IR, CRP Non-Emergency Grazing IR, and the Non-Emergency Incidental Grazing IR.
- Ability to develop grazing management plans for multiple herds.

Job Class III-IV

- Ability to develop plans for different species and livestock types (i.e. cow/calf, beef stocker/yearling, sheep-ewe flock, sheep-feeder lambs/replacement ewes, goats, milking dairy).
- Has developed multiple grazing management plans that meet Job Classes I and II.

Job Class V

- Ability to develop grazing plans for the purpose of controlling noxious and invasive species.
- Ability to develop grazing plans for native vegetation (restored or native prairie).
- Ability to develop grazing plans that incorporate annual forages.
- Ability to plan grazing management plans utilizing virtual fence technology. Grazing management plans should address basic grazing management principles: providing rest, managing residual/utilization, managing timing, and managing the length of the grazing periods.
- Ability to plan other facilitating practices that may be needed to properly support grazing management with virtual fencing, such as other fence types and watering systems.
- Ability to assist the producer with planning the correct virtual fence system for their operation.

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Installation oversight and certification

- Ability to work with producer to gain necessary documents and gather monitoring information to support grazing management decisions (such as grazing records) and conduct pasture management check-in's throughout the growing season.
- Ability to estimate utilization rate and utilization uniformity across the pasture.
- Ability to measure stubble heights in the pasture and determine if the minimum residual grazing heights are being maintained as per the grazing plan.
- Ability to determine if sensitive areas are properly managed as specified in the grazing management plan.
- Ability to determine if sacrificial paddocks are properly selected to minimize impact to sensitive areas and reduce risk of erosion.
- Ability to determine if the needed facilitating practices are installed and properly functioning.
- Ability to determine if the practice application meets the plans and specifications in the conservation practice standard.

COMMON ASSOCIATED PRACTICES:

Grazing Management (528), is commonly applied with practices such as Forage and Biomass Planting (512) Brush Management (314), Pest Management (595), Fence (382), Livestock Pipeline (516), Heavy Use Protection (561), and Watering Facility (614).

ADDITIONAL MATERIALS:

- Grazing Systems Planning Guide
- Minnesota Agronomy Technical Note 31: Herbaceous Vegetation Establishment Guide. Located in Section I of the eFOTG.
- Minnesota Agronomy Technical Note 17 Guidelines for Herbaceous Stand Evaluation. Located in Section I of the eFOTG.
- Improving and Sustaining Forage Production in Pastures.
- Guide to Pasture Condition Scoring. Located in Section III of the eFOTG.
- National Range and Pasture Handbook.
- BLM Fences Handbook.
- A Landowner's Guide to Prairie Management in Minnesota. 2002 Publication developed by U of M and NRCS.
- Electric Fence for Serious Grazers (Missouri NRCS).
- Brush Management: Biological Control Using Grazing. Located in Section IV of the eFOTG (Brush Management Folder).
- Herbaceous Weed Treatment: Biological Control Grazing. Located in Section IV of the eFOTG (Herbaceous Weed Treatment folder).

Suggested On The Job Training (OJT) or AgLearn Trainings

- Grazing Planning Considerations.
- Livestock resource inventory for grazing systems.
- Sensitive Features on Pasture and Rangeland.
- Forage and weed identification in pasture and rangeland.
- Estimating Forage Production Training (BWSR Tech Talk and Field training).
- Grazing Systems Facilitating Practices Training (BWSR Tech Talks and Field Training).
- Advanced Grazing Management (Field Training), Grazing Management Cohort, OR Grazing Management OJT.
- Pasture Monitoring Training (Field Training).
- Economics of Grazing Systems.