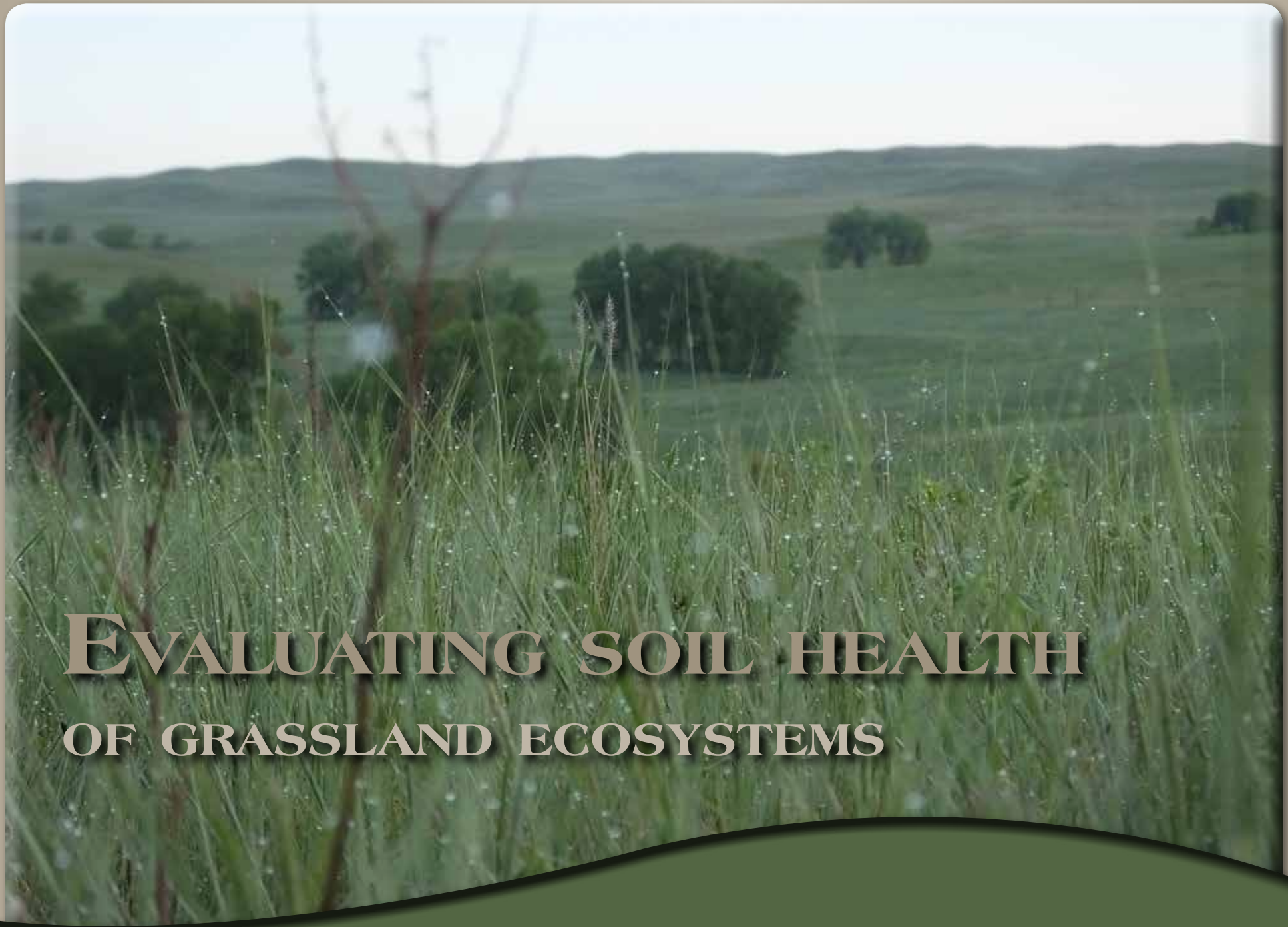
2015 Grassland Planner



Evaluating soil health of grassland ecosystems

Grassland Managers,

When the rain comes, will your soil be ready? Management of grasslands is paramount to the overall health of our soil and water resources. Healthy, biologically diverse soils are important for the prairie ecosystem. A teaspoon of healthy soil can have more biological organisms in it than there are people on earth.

Recently, conservationists with the Natural Resources Conservation Service have been studying the effects that management has on soil properties, such as biology and infiltration, and the results are dramatic. Studies show that infiltration is significantly impacted by the management practices being implemented on the land.

Increased infiltration resulting from better management means that the water that falls on an operation will benefit that operation. Changes in management don't have to be drastic to have a positive influence on infiltration and ultimately the health of your natural resources and your bottom line.

Soil health on rangeland is an integral part of the ecosystem function. It is described as the capacity of a soil to maintain its function and flow of ecosystem services given a specific set of physical, chemical, and environmental boundaries. Maintained or improved soil health is guided by four principles: 1) use plant diversity to increase diversity in the soil; 2) manage soils more by disturbing them less; 3) keep plants growing throughout the year to feed the soil; and 4) keep the soil covered as much as possible. While these principles were developed primarily for agronomic systems, there is also a strong correlation between the 17 Indicators of Rangeland Health and these soil health principles. Because of this, soil health on rangeland can be considered as part of the rangeland health assessment, and both the range and soil health evaluations are strengthened when looking at them together.

Through this Grassland Planner, the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) is working with the South Dakota Grassland Coalition (SDGC) and other partners to improve the health of grassland resources. The NRCS, SDGC & SDSU Extension Service and other entities can assist you to determine and formulate resource protection and enhancement options that fit your operation.

Depending upon the area of expertise and/or need for financial assistance, staff are available through NRCS and SD Conservation Districts, and other partners such as the SD Grassland Coalition & SDSU Extension specialists, the U.S. Fish and Wildlife Service, the South Dakota Departments of Agriculture and Game, Fish and Parks, and private organizations, such as Pheasants Forever, Ltd., who may have additional avenues of assistance.

Technical help is available for:

- Soil health
- Water quality and quantity
- Grazing systems
- Fencing
- Monitoring techniques
- Drought management
- Grasses for forage production

Thank you for your part in keeping healthy the environment we all share. Enjoy the Grassland Conservation Planner.

Jeffrey Zimprich, State Conservationist
USDA Natural Resources Conservation Service
South Dakota

Board of Directors and Members of the
South Dakota Grassland Coalition

United States Department of Agriculture
Natural Resources Conservation Service

SOUTH DAKOTA GRASSLAND

WWF

Wildlife Division
South Dakota Department of Game, Fish and Parks

Alternative Forages

Integration of either perennial forage crops and/or cover crops, as well as incorporating livestock grazing back into agricultural cropping systems can promote healthy soil environments. Utilizing alternative sources of forage can help reduce pressure on grazing lands. Utilizing alternative sources for grazing and elimination of soil disturbance relate to soil health principle: "Manage soils more by disturbing them less." Check with your local NRCS office to find out more about technical or financial assistance to integrate livestock into cropland systems.

January

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
December 2014 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	February 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	2015 Leopold Conservation Award Nomination Period Open	Mark your calendar for SDSU Extension, NRCS and other conservation partner workshops throughout the year.	1 New Year's Day	2	3
4	5	6	7	8	9 Finalize grazing plans for this growing season.	10
11	12	13 If your operation needs improvements on your grazing lands, consider applying for the Environmental Quality Incentives Program (EQIP) or the Conservation Stewardship Program (CSP). Signup is continuous.	14	15	16	17
18	19 Martin Luther King, Jr. Day	20	21	22	23	24
25	26	27	28	29	30	31

Soil Structure and Surface Compaction

Healthy grassland soils have dark. granular structure which resembles "moist chocolate cake." Look for this kind of structure in well-managed grasslands. In the late winter or early spring, soils can become saturated with snow melt and spring runoff. Be careful when grazing on saturated soils, as compaction can be an issue (note the platy structure in the inset photo). Plan to rotate livestock or limit use on areas where compaction is likely to occur.

Healthy grassland soil.

Platy structure in an overgrazed pasture.

February

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Groundhog Day	3	4	5	6	7
8	9	10	11	12 Lincoln's Birthday	13	14 Valentine's Day
15	16 Presidents' Day Washington's Birthday	17	18	19	20	21
22	23	24	25	26	27	28

Conservation easements can keep working lands in production while protecting the grassland resource. Contact NRCS or USFWS for options and payment rates.

January 2015

SU	MO	TU	WE	TH	FR	SA
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

March 2015

SU	MO	TU	WE	TH	FR	SA
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Plant Diversity = Soil Biological Diversity

Functional/structural groups are groups of plant species that are similar in terms of height, root structure, season of growth, nitrogen fixing ability, etc. Examples of groups in this photo are tall statured warm-season grasses, early-season forbs, native legumes, shrubs, and others. Soil health properties (native mycorrhizal fungi and bacteria in balance, improved soil structure, higher levels of organic matter, etc.) benefit when the functional/structural groups closely match the reference plant community for the specific ecological site. In this photo are tall statured warm-season grasses (big bluestem), mid statured cool-season bunchgrasses (green needlegrass), forbs (scurfpea), and shrubs (leadplant). Varied structure also increases snow catch, and provides cover for livestock and wildlife.

March

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6 2015 Leopold Conversation Award Nominations Deadline	7
8 Daylight Savings Time Begins	9	10 Male sage grouse begin attending leks to perform courtship strutting displays.	11	12	13	14
15	16	17 St. Patrick's Day	18 National Agriculture Day Finalists Announced 2015 Leopold Conservation Award	19	20 *First Day of Spring*	21
22	23	24	25	26	27	28
29	30 Inventory fences, water systems; perform repairs.	31				

Based on rainfall amounts received last fall and precipitation forecast for this spring, determine if grass production will be close to normal or reduced this spring. Develop and/or revise action items within your drought contingency plan as needed. Find the NRCS SD Drought Tool at www.sd.nrcs.usda.gov.

Review last year's grazing records. Document adjustments and/or changes for this year's grazing plan.

February 2015

SU	MO	TU	WE	TH	FR	SA
1	2	3	4	5	6	7
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15	16	17	18	19	20	21
22	23	24	25	26	27	28

April 2015

SU	MO	TU	WE	TH	FR	SA
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Soil Surface Stability

The soil surface resistance to erosion is important for soil site stability. Erosion resistant soils are less affected by raindrop impact, and good soil aggregate stability leads to higher infiltration and less runoff. The soil surface resistance to erosion can be measured using a field soil aggregate stability kit (middle right inset) shows a stable and an unstable soil aggregate. Organisms referred to as "biological crusts" such as lichens, mosses, and cyanobacteria (lower right), tend to occupy "niches" on ecological sites and help increase stability. At times, an overabundance of these organisms (e.g., club moss) can negatively affect infiltration.

April

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
March 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	May 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		1 April Fools Day	2	3 Good Friday Passover Begins	● 4
5 Easter	6	7	8	9	10	11 Passover Ends
◑ 12	13	14	15 Assess growth of introduced cool-season pasture. Continue to use hay, grains or silage forages if spring pasture growth is less than 3-leaf stage.	16	17	○ 18
19 Mallard and pintail ducks begin nesting Do you have a Drought Plan?	20	21	22 2015 Leopold Conservation Award Winner Announcement Earth Day	23 Average nest initiation for prairie grouse in central SD	24 Arbor Day	◐ 25
26 Take advantage of early-growing species (e.g., bluegrass) in order to manage species composition. Plan and complete spring weed control. Spot spraying may be necessary.	27	28	29	30		

Managing Plants to Capture Water

Plant community composition affects infiltration and runoff. A combination of shallow and deep rooted plants, as well as fine and coarse roots as would be found on a diverse plant community such as this Wet Meadow ecological site (main picture) improves infiltration and reduces runoff. The overgrazed site on the lower right dominated by Kentucky bluegrass and smooth brome will likely have less infiltration and more runoff. A single-ring "infiltrometer" can be used to further assess infiltration rates. This Wet Meadow ecological site as well as other ecological sites that contain wetland features help to filter runoff and provide habitat for wildlife.

May

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
April 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	June 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	 Steve Spawn, USFWS National Wetlands Month		Use your infiltration kit to test your soil	1 Begin primary nesting season for Farm Bill programs. May Day	2
3	4	5	6	7	8	9 International Migrating Bird Day
		Is there a delay in green-up of native grasses? Make adjustments to turn-out dates dates accordingly.				
10 Mother's Day	11	12 Peak nest initiation for pheasants in eastern SD Watch for grass tetany.	13	14	15	16 Armed Forces Day
17	18	19	20 Place salt and mineral away from water resources to provide for better range utilization.	21	22	23
24/31	25 Memorial Day	26	27 Peak of white-tailed deer fawn births in eastern SD	28 Graze before boot stage/seed set for better forage quality then rotate for plant recovery	29 Watch for details of the SD Grassland Coalitions Annual Bird Tour	30

Monitoring for the "Big Picture"

Hilltop view of the 2014 Leopold Award winning ranch – the Rock Hills Ranch of Lowry, South Dakota. Lyle and Garnet Perman, along with son Luke and daughter-in-law Naomi regularly monitor grass and measure trends to ensure that management and resource objectives are being met.

Lyle Perman placing an enclosure to measure grass production.

June

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Remember to enter information in your Record for Livestock Grazing.	1 Peak of prairie grouse hatch.	2	3	4	5	6
7	8 Peak of mule deer fawn births in western SD.	9 Got a Drought Plan?	10	11	12 Begin to seed summer annual forages.	13
14 Flag Day	15 Check water sources frequently.	16	17 United Nation Observation: World Day to Combat Desertification and Drought	18 Peak of pheasant hatch.	19	20
21 *First Day of Summer* Father's Day	22	23 Watch grazing heights and rest periods carefully!	24	25	26	27
28 Move animals based on plant height NOT calendar dates!	29	30				

May 2015

SU	MO	TU	WE	TH	FR	SA
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

July 2015

SU	MO	TU	WE	TH	FR	SA
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Are We Reaching Our Potential?

Similarity index refers to how similar the vegetation of a site is to the reference or historic plant community. Usually the higher the similarity index, the more diverse the plant community. A diverse plant community above ground (sideoats grama, green needlegrass, western wheatgrass, little bluestem, prairie coneflower, purple coneflower, silver buffaloberry, bur oak, etc.) results in diversity below ground (a soil health principle). Annual production is also an important aspect of soil and rangeland health, and influences the similarity index value. In addition, a diverse plant and soil community results in more diversity of habitat for wildlife and enhanced resistance to drought.

Clipping to determine production

July

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
June 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	*August 2015* SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	• Graze annuals at 18-24" height • Watch pasture for weeds & invasives • Remember to enter information in your Record for Livestock Grazing.	1	2	3	4 Independence Day
5	6	7	8	9	10	11
			If drought conditions occurred last spring and continue now, forage production will be reduced. Action items for herd management and adjustments to the grazing plan may need to be implemented.			
12 Check water sources frequently. Condition of of water sources, i.e., sediment or algae can reduce an animal's water intake.	13	14	15	16	17	18
19	20	21	22	23	24	25
				Field check growth before turning into warm-season grass pastures.		
26	27 Thistles are best controlled at boot stage.	28	29	30	31	• Evaluate shade/ water needs and plan for next year. • Slow rotation and lengthen recovery periods.

Keeping the Soil Intact

The soil health principle of keeping the soil covered provides for protection to the soil and resources for wildlife. Plant pedestals and terracettes form on grasslands when too much cover is removed. When soil is exposed further, water flow patterns and eventually gullies will form.

August

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
July 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	September 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	Remember to enter details in your Record for Livestock Grazing.		Contact the SD Grassland Coalition about the South Dakota Grazing School.		1 End primary nesting season for Farm Bill programs.
2	3	4	5	6	7	8 Start planning for native seed harvest.
9	10	11	12 Continue to implement Drought Contingency Plan action items as needed.	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

Consider cover crops as alternative forage; plant into small grain stubble.

Finding the Residue Balance

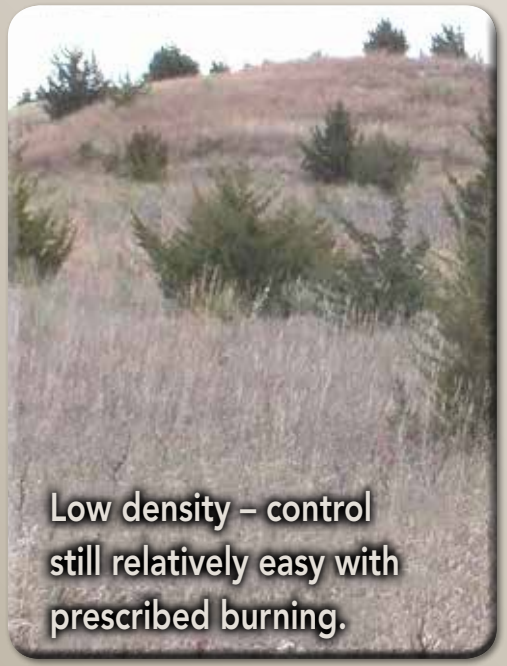
The amount of plant litter on the soil surface is an indication of nutrient cycling on a site. Litter cover is also important to protect the soil surface, and to keep soil temperatures moderated. Too much litter can be detrimental to native plant vigor and reproduction, and favors an increase in shade-tolerant species, such as Kentucky bluegrass and smooth bromegrass.. If you scrape away the litter, you can see the effect – plant bases spread far apart (represented by blue circles in the inset).

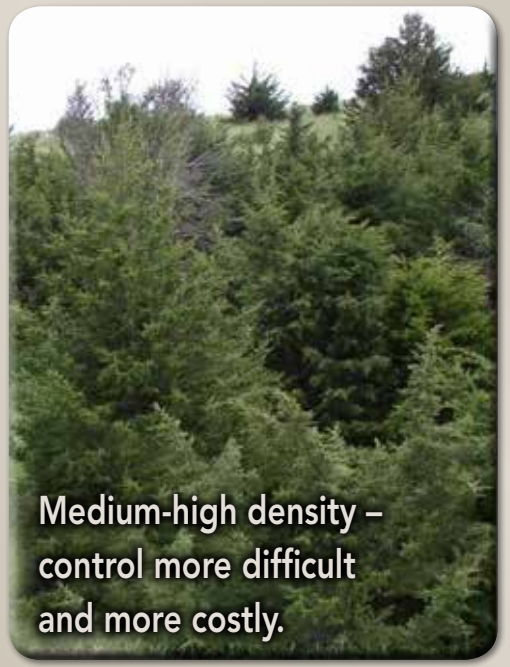
September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
August 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	October 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1	2	3	4 Remember to enter details in your Record for Livestock Grazing.	◑ 5
6	7 Labor Day	8 Continue to implement Drought Contingency Plan action items as needed.	9	10	11 Patriot Day	12
○ 13	14 Plan winter feed supply.	15	16 Target pastures dominated by cool-season invasive species if green-up occurs in order to reduce pressure on native grasses.	17	18	19
20	◐ 21	22	23 First Day of Autumn	24	25 Evaluate calf marketing program.	26
27	● 28	29	30			

Invasive Species

Invasive species, such as eastern red cedar, reduce diversity and forage production, and decrease hydrologic function. Conservation management alternatives can restore function and values of the grasslands. Control is relatively inexpensive and easier when the trees are smaller. This can be done with practices such as prescribed burning. When the canopy closes, herbaceous vegetation is greatly reduced and control becomes more expensive, but can be done with practices such as mechanical removal; benefits of control include increase forage production and diversity, and improved hydrologic function.


Low density – control still relatively easy with prescribed burning.


Medium-high density – control more difficult and more costly.


After control – grass production and infiltration increase.

October

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
September 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	*November 2015* SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	• Allow animals to graze alternative forage sources, such as cover crops or cornstalks, to allow a rest period for pastures. • Try strip grazing the stalks to reduce trampling.		1 South Dakota Stockgrowers Convention at Ramkota Hotel & Convention Center, Rapid City	2	3
4	5 Conduct annual soil tests on fertilized pasture.	6	7	8	9 Enjoy the results of your management! Plan an outing with a child for pheasant, grouse, deer or duck hunting and introduce them to what conservation looks like!	10
11	12 Columbus Day Native American Day	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27 Continue to implement Drought Contingency Plan action items as needed.	28	29	30	31 Remember to enter details in your Record for Livestock Grazing. Halloween

If your operation needs improvements on your grazing lands, consider applying for the Environmental Quality Incentives Program (EQIP) or the Conservation Stewardship Program (CSP). Technical assistance is free and financial assistance signup is continuous.

Keep It Under Cover

Excessive bare ground above what is expected for the ecological site can lead to erosion, loss of topsoil, and reduced infiltration and increased runoff. Adequate cover improves infiltration and soil health, and provides cover for wildlife and livestock.

November

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Daylight Savings Time Ends	2	3	4 Prepare water systems and equipment for freezing temperatures!	5	6	7
8	9	10	11 Veteran's Day	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26 Thanksgiving	27	28
29	30	Do you have your 2016 pastures figured out?				

October 2015

SU	MO	TU	WE	TH	FR	SA
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

December 2015

SU	MO	TU	WE	TH	FR	SA
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Grassland Management

Proper utilization levels during the growing season provides for vegetative cover into the winter. Coupled with adequate recovery periods and changing the season of use in a rotation, a well-planned prescribed grazing system can increase plant diversity and improve vegetation structure. Winter utilization levels should be managed as well to protect plant and soil health.

South Dakota Grasslands

Evaluate 2015. Plan for 2016 and the next generation.

December

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
November 2015 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	January 2016 SU MO TU WE TH FR SA 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1	2	3	4	5 World Soil Day
6 Hanukkah Begins	7 Pearl Harbor Remembrance Day	8	9 2015 Leopold Conservation Award Presentation SD Cattlemen's Convention Check pastures and the SD Drought Tool for 2016 forage production forecast.	10	11	12
13	14 Hanukkah Ends	15	16 Monitor body condition score trends of your herds.	17	18	19
20	21 First Day of Winter	22	23	24	25 Christmas Day	26 Kwanzaa Begins
27	28 Did you remember to take a vacation this year? Plan for next year!	29	30	31 Near Year's Eve	Test forages and hay before feeding; results can improve winter feeding efficiency. Separate animals by nutritional needs: lactating or gestating stock need your BEST forages.	

Grassland Planning

Conservation Stewardship Program Manager, Jessica Michalski working with the Kopriva Family, of Raymond, SD, who were the 2012 South Dakota Leopold Conservation Award Winner.

Photo Credits

Bill Cumbow, Valentine, NE
Cronin Farms: Dan Forgey, Gettysburg, SD
Dave Steffen, Burke, SD
Doug Feltman, Chamberlain, SD
Lisa Surber, Montana State University, Bozeman, MT
USDA Natural Resources Conservation Service: Mitch Faulkner, Colette Kessler, Stan Boltz, Mark Rohlfing, Matt Odden, and Tanse Herrmann (all of South Dakota); Rick Peterson (Wyoming), and Jeff Printz (North Dakota).

Many resources are available to help you to determine and formulate resource protection and enhancement options that fit your operation. Technical help is available for:

- Soil Health
- Water Quality and Quantity
- Grazing Systems
- Fencing
- Monitoring Techniques
- Drought Management
- Grasses for Forage Production

Depending upon the area of expertise and/or need for financial assistance, staff are available through the following conservation partners:

USDA Natural Resources Conservation Service
www.nrcs.usda.gov
South Dakota State Office
(605) 352-1200

South Dakota Grassland Coalition
www.sdgrass.org

South Dakota Conservation Districts
www.sdconservation.org
(605) 895-4099

South Dakota State University (SDSU) Extension Service
http://igrow.org
(605) 394-2236

SD Department of Agriculture
http://sdda.sd.gov/
(605) 773-3375

South Dakota Game, Fish and Parks
http://gfp.sd.gov/
(605) 773-3658

U.S. Fish and Wildlife Service, Brookings
www.fws.gov/mountain-prairie/pfw/sd
(605) 697-2500

Pheasants Forever
https://pheasantsforever.org
(605) 651-2716

Ducks Unlimited
www.ducks.org/south-dakota/
(605) 881-3379

World Wildlife Fund (WWF)
202 S. Black Ave.
Bozeman, MT 59715
Phone: (406) 582-0236

Use a Systems Approach

Grazing systems range from continuous use of one pasture over a long period of time to intense grazing of small areas for short periods of time. There are trade-offs for every system, and you'll have to decide which system works best for your operation. You may want to combine concepts and develop a system that works into your time schedule, livestock operation and available pasture.

CONTINUOUS GRAZING is a one pasture system where livestock are left to graze in a large area for the entire growing season.

ADVANTAGES:

- Requires least labor and time.
- Capital costs are minimal.
- Animals usually eat the best plants if not overstocked.

DISADVANTAGES:

- Lower stocking rate and less pounds produced per acre.
- Higher stocking rates can lower quality of forage and yields.
- Uneven pasture use.
- Weeds and brush may be a problem.
- Both overgrazing and under grazing can occur in the same pasture more easily because of a lack of options to move livestock.
- Animal manure is distributed unevenly.
- Soil and plant health is usually degraded.

ROTATIONAL GRAZING is a system with more than one pasture in which livestock are moved according to a planned system that meets goals and objectives for production and sustainability.

ADVANTAGES:

- Can increase forage production and condition of pasture over a continuous system.
- Allows pastures to rest and allows for regrowth.
- Can provide for longer grazing season, reducing winter feed.
- More even distribution of manure throughout.
- The benefits of Rotational Grazing come from improved harvest efficiency rather than greater production.

DISADVANTAGES:

- Fencing costs and water supply establishment can be higher than in continuous systems.

INTENSIVE MANAGEMENT is a system with several pastures, sometimes referred to as paddocks. Livestock are moved often from paddock to paddock, according to forage use and allowing for rest periods.

ADVANTAGES:

- Highest harvest efficiency per acre.
- Weeds and brush are usually controlled naturally.
- More even distribution of manure throughout.
- Usually increases stocking rates and livestock seem more content.
- Paddocks may be seeded or interseeded to different forages, depending on producer's goals and objectives.
- Longer rest periods improve grass and soil health.
- Paddocks and forages are grazed more efficiently.
- Livestock benefit from careful monitoring accompanying frequent rotation.

DISADVANTAGES:

- Requires careful monitoring of forage.
- Initial costs may be higher due to fencing materials and water.
- Water distribution systems may be more complicated due to increased number of pastures.

Map images courtesy SD Grassland Coalition.

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Record for Livestock Grazing

Name: _____
Year: _____ Farm No.: _____ Tract No.: _____

Record of Actual Observations

Field/ Pasture	Acres	Livestock Species/class	Livestock Wt.*	Livestock No.	Key Forage Species	Date Livestock In	Begin Graze Ht.*	Date Livestock Out	End Graze Ht.*	Days Grazed	Days Rest	Precip. Type/ inches	Remarks/ Observation Weed Pressure Wildlife Use etc.

Note: Livestock weight estimated; Beginning Graze Ht., estimated (For accuracy measure at least 10 plant locations); Ending Graze Ht. estimated (For accuracy measure at least 10 plant locations); Be sure to measure same species for grazed and un-grazed pastures. These notes may be suitable as documentation for conservation programs including the Environmental Quality Incentives Program (EQIP) or the Conservation Stewardship Program (CSP).

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

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Name: _____
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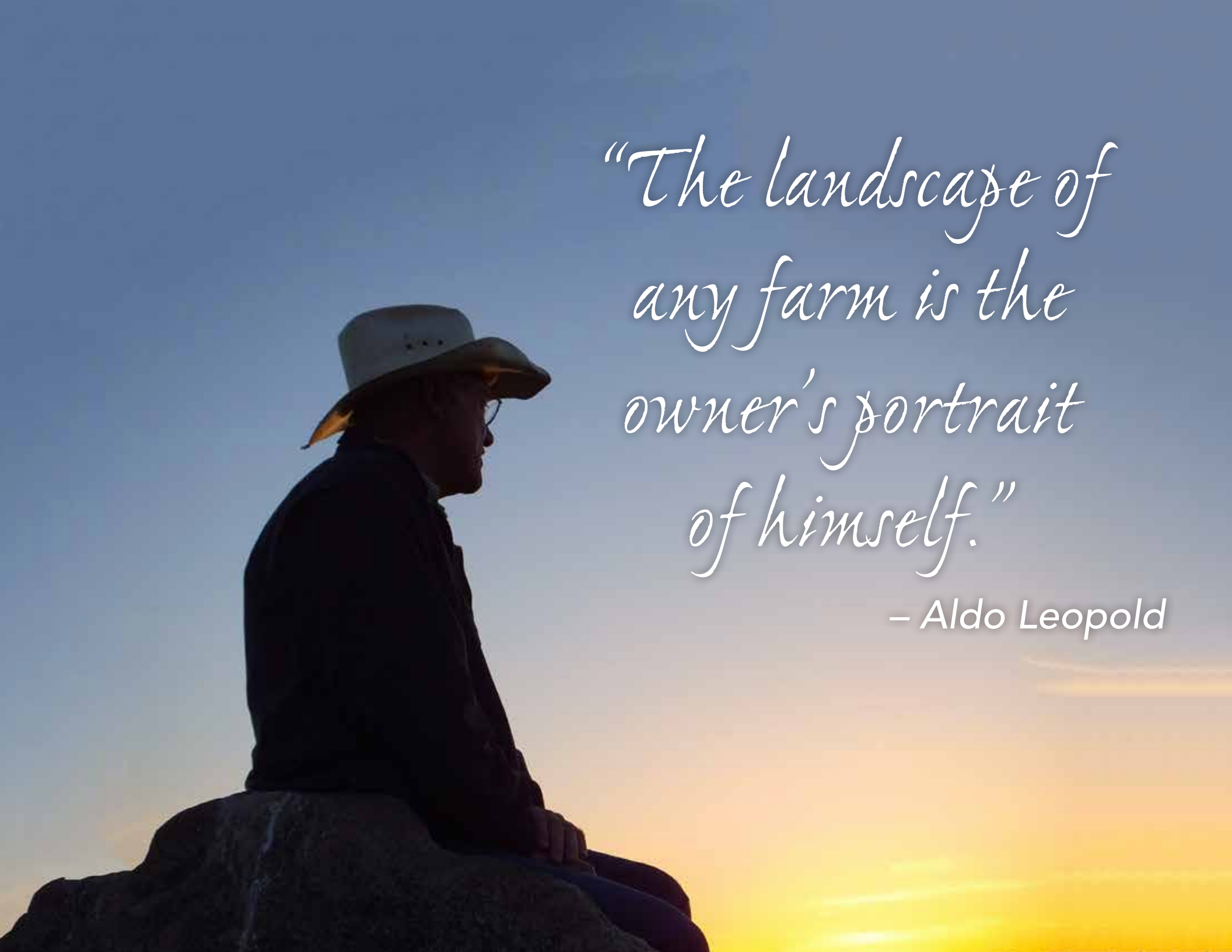
Field/ Pasture	Acres	Livestock Species/class	Livestock Wt.*	Livestock No.	Key Forage Species	Date Livestock In	Begin Graze Ht.*	Date Livestock Out	End Graze Ht.*	Days Grazed	Days Rest	Precip. Type/ inches	Remarks/ Observation Weed Pressure Wildlife Use etc.

Note: Livestock weight estimated; Beginning Graze Ht., estimated (For accuracy measure at least 10 plant locations); Ending Graze Ht. estimated (For accuracy measure at least 10 plant locations); Be sure to measure same species for grazed and un-grazed pastures. These notes may be suitable as documentation for conservation programs including the Environmental Quality Incentives Program (EQIP) or the Conservation Stewardship Program (CSP).


"The landscape of any farm is the owner's portrait of himself."
– Aldo Leopold