2023 South Dakota Grasslands Planner

Thank you for your passion for healthy grasslands.

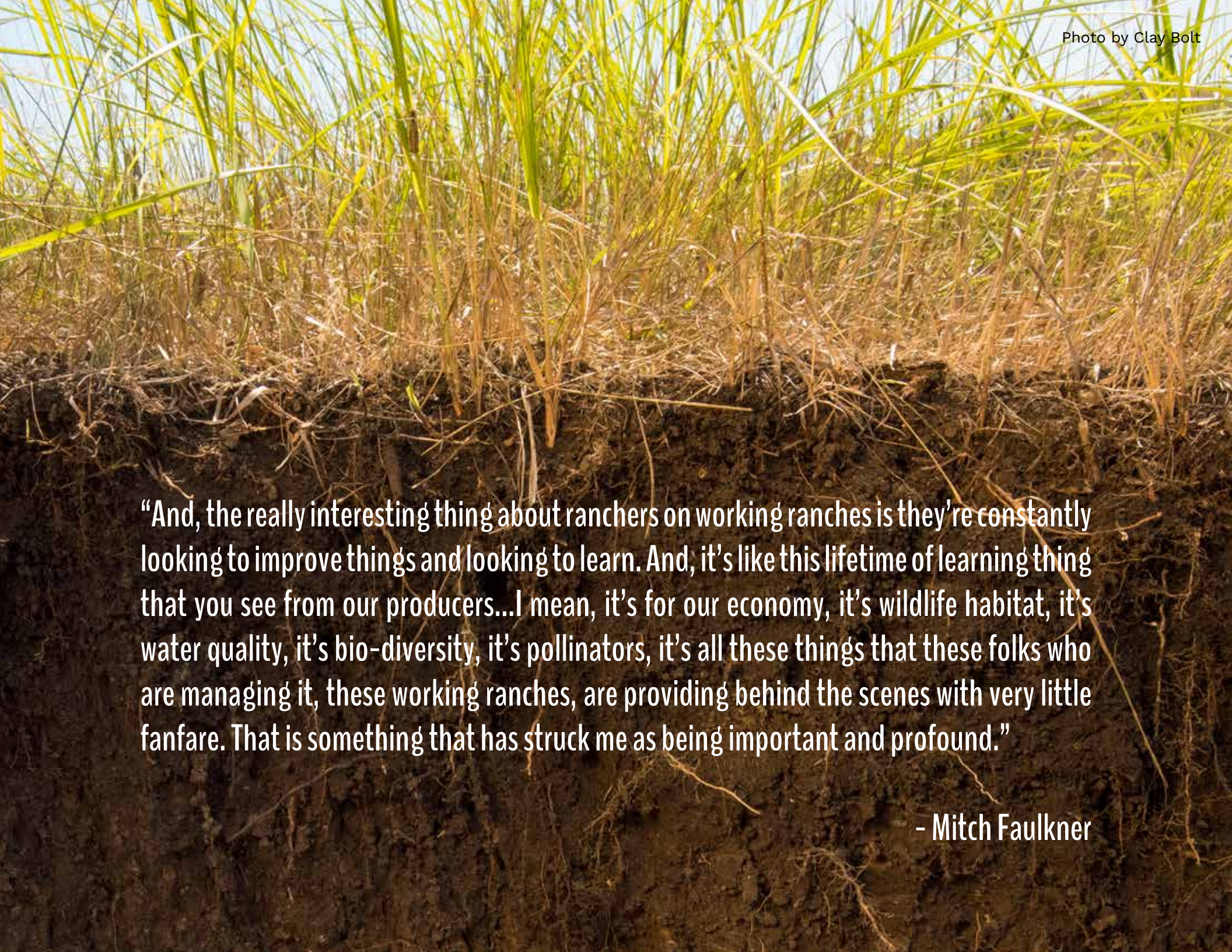

Photo by Clay Bolt

"And, the really interesting thing about ranchers on working ranches is they're constantly looking to improve things and looking to learn. And, it's like this lifetime of learning thing that you see from our producers...I mean, it's for our economy, it's wildlife habitat, it's water quality, it's bio-diversity, it's pollinators, it's all these things that these folks who are managing it, these working ranches, are providing behind the scenes with very little fanfare. That is something that has struck me as being important and profound."

- Mitch Faulkner

To some, pulling a plant – a weed, let's say – is a mundane task. Give it a short but effective tug, and hopefully that plant will come out root still attached. Gone! Have you ever examined the roots as you pull those "weeds"? What type of structure do the roots boast? Perhaps a long taproot that's mangled from compaction or a fibrous system with tiny soil aggregates still attached? How was that plant holding the soil together? What impact did that plant's roots play on the ecosystem below ground?

Now, think of the perennial grasses, flowers, and shrubs of the grasslands. What happens when you attempt to pull a stem of big bluestem or western wheatgrass? If you're lucky–you might get a smidgen of root, but typically you only get the top end of the plant. Why? Because perennial grasses of the prairie have DEEP roots, and a lot of them. And they are ALIVE!

These living roots are the lifeline of the prairie. In healthy, well-managed grasslands, roots hold the soil in place, increase infiltration, reduce runoff, increase water holding capacity, etc. It's not only the above ground portion of the plant that is important for grasslands managers, but the below ground portion as well!

The above ground production of the grasslands does not even compare to the below ground production of roots that keeps the prairie alive. One would think that the height of the above ground portion of the plant would equal that of the below ground portion. For grasses, the roots can outweigh the leaves by up to four times! No wonder it's so difficult to pull these plants from the ground!

These roots interact with each other for resources, but also with the microbial ecosystem below ground. The plant produces sugars through photosynthesis above, while below the roots "leak" sugars to share with different microbes – fungi, bacteria. These microbes "trade" the sugar for needed plant resources – water molecules and nutrients. As the plants used those "traded" resources, the plants continue to grow above and below. As the roots continue to grow and trade, they eventually die. So specific microbes reprocess those dead roots into useable nutrients that can be used by the plants again if another trade is ever needed. It's quite a cooperative system they have going!

Some species of grasses have specific microbes in which they associate. So, a diverse plant community above ground leads to a diverse plant community below ground as well! This ecosystem has evolved together for thousands of years – so they've figured out how to all get along in some way or another!

Because specific plant species have specific microbial associations, keeping the grasslands greenside up is very important. Once a prairie has been tilled, those associations are lost, that soil teeming with microbial life is killed – we can't ever get that back, well at least not in our lifetime. We might be able to restore, but if it took thousands of years for the prairie to evolve to where it is today, it's going to take a long time for a tilled landscape to recover as well.

The grassland loving (root-loving) producers – farmers, ranchers, grassland managers – showcased in this planner recognize the importance of keeping the grasslands in grass, and how important it is to manage them appropriately for not only for the above ground production, but the below ground production as well. These folks have learned through trial and error, mentors, and Mother Nature how to best manage their grasslands and keep their roots running deep. We hope you enjoy the stories of these producers and their families.

Tony Sunseri
State Conservationist
USDA Natural Resources
Conservation Service

Board of Directors
and Members
South Dakota
Grassland Coalition

The Nature Conservancy
Ducks Unlimited
Audubon Dakota
Pheasants Forever
South Dakota State University
USDA United States Department of Agriculture Natural Resources Conservation Service
Wildlife Division South Dakota Department of Game, Fish and Parks
The Cattle Business Weekly
Tri-State Livestock News
South Dakota Grassland Coalition
U.S. Fish and Wildlife Service Partners for Fish & Wildlife






Ollila Family • Newell

Dave, Holly, Finn and Tate

"If we can develop healthy grasslands and healthy soils, that's going to create a healthy animal. And we feel confident that what we're providing for a meat product and a wool product to the consumer is done in a manner that is responsible stewardship, but also is going to help continue the generations of production of our family on this land."

- Dave Ollila

JANUARY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 New Year's Day	**2**	**3**	**4**	**5**	**6**	**7**
8	**9**	**10**	**11**	**12**	**13**	**14**
15	**16** Martin Luther King Jr. Day	**17**	**18**	**19**	**20**	**21**
22	**23**	**24**	**25**	**26**	**27**	**28**
29	**30**	**31**				

New Year means new conservation plan! Get started with NRCS.

If your operation needs improvements on your grazing lands, consider applying for EQIP or CSP. Sign-up is continuous.

Conservation easements can keep working lands in production while protecting the grassland resource. Please contact NRCS or U.S. Fish and Wildlife Service for options and payment rates.

December 2022

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25	26	27	28	29	30	31

February

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19	20	21	22	23	24	25
26	27	28				

YouTube

Breyer and Wollschlager Families • Strandburg

Caden, Chuck, and Jordan Wollschlager and Dwayne and John Breyer

"This landlord/tenant relationship started with Chuck's [Wollschlager] father-in-law, Melvin Swenson, and my dad [Dwayne Breyer]. Melvin and dad farmed together for over 50 years, which is a long time. I think that's pretty important. And then it went to Chuck; and now Chuck has been in the picture for 20 years or more. And so, it's been a lifelong deal between our family and their family and I think that's pretty neat."

- John Breyer

FEBRUARY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January S M T W T F S 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** S M T W T F S 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	YouTube	**1**	**2** Groundhog Day World Wetlands Day	**3**	**4**
5	**6**	**7** Looking to make improvements in your grassland health? See NRCS for free one-on-one conservation advice. Farm Bill Programs sign-up is continuous.	**8**	**9**	**10**	**11**
12 Lincoln's Birthday	**13**	**14** Valentine's Day	**15**	**16**	**17** Great Horned Owl begins nesting	**18**
19	**20** Presidents' Day Washington's Birthday	**21** Mardi Gras	**22**	**23**	**24**	**25**
26	**27**	**28**				

Sander Family • Custer

Justin McConkey USFS, Timothy and Clayton Sander, Lucas Bindel USFS

"The impact in the grazing that we see with the mob short-term grazing is pretty staggering. They come in and eat the grass and then we get out and then let it recover. The difference is just...it's unbelievable. The native grasses have come back in so much thicker and heavier in areas that were previously continually grazed."

- Clayton Sander

MARCH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
February S M T W T F S 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	**April** S M T W T F S 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	YouTube	**1**	**2**	**3**	**4** Male Sage Grouse begin attending leks to perform courtship and strutting displays.
5	**6**	**7**	**8**	**9**	**10**	**11**
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						
12 Daylight Savings Begins	**13**	**14** Western Meadowlarks migrate through the state. Nesting in medium height grassland habitat begins mid-May.	**15**	**16**	**17** St. Patrick's Day	**18**
19	**20** First Day of Spring	**21** National Ag Day	**22**	**23** Chorus frogs emerge and begin calling from small wetlands	**24**	**25**
26	**27**	**28** Make sure your pollinator plot planning and site preparation are on schedule. Add a smaller butterfly or native pollinator garden including milkweeds near your home to attract monarchs.	**29**	**30**	**31**	






Fagerland Family • Langford

Jean and Dennis

"I think what set us on our path on our journey of soil health, as I saw, was the rainfall simulator. In fact, I had to see it several times before it really sunk in what was happening underneath our soil and how important it was."

- Dennis Fagerland

APRIL

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
March S M T W T F S 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** S M T W T F S 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	YouTube	Watch for migrating Sandhill and Whooping cranes. Report Whooping Crane sightings to SD Department of Game, Fish and Parks or the U.S. Fish and Wildlife Service.			**1** April Fool's Day
2	**3**	**4**	**5**	**6**	**7** Good Friday	**8**
		Warblers migrate through the state, passing through or staying to rest. The Yellow Warbler is a common nesting warbler nearly statewide.				
9 Easter	**10** Easter Monday	**11**	**12** Mallard and Pintail ducks begin nesting.	**13**	**14** Average nest initiation for prairie grouse in central SD.	**15** Tax Day
16	**17**	**18**	**19**	**20**	**21**	**22** Earth Day
	Be proud of the difference volunteers make in your community - National Volunteer Week, April 16-22					
23 / **30**	**24** Grass is greening up, do you need to adjust your mineral program?	**25**	**26** Administrative Professionals' Day	**27**	**28** Arbor Day	**29**

Dutton Family • Faith

Dave and Mel

"My dad always said we're just stewards of the land and that's kind of how we approach it. We want to kind of leave the land as good or better than how we received it. And so one of the things that my dad always did and I've continued that practice is trying to reserve some areas for the wildlife and the bird species. There's nothing I enjoy more than seeing the deer, the antelope, varieties of birds, upland grouse and partridge as well as the ducks and geese that nest here."

- Mel Dutton

MAY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 May Day	**2** Watch for grass tetany.	**3** Start of primary nesting season as referenced in many Farm Bill programs.	**4**	**5** Cinco de Mayo	**6** Peak nest initiation for pheasants in Eastern SD.
7	**8** Watch for Monarch butterflies.	**9**	**10**	**11**	**12**	**13** International Migratory Bird Day
14 Mother's Day	**15**	**16**	**17**	**18**	**19**	**20** Armed Forces Day
21	**22**	**23**	**24**	**25**	**26**	**27**
28 Pentecost	**29** Memorial Day	**30** Remember to enter information in your Record of Livestock Grazing.	**31**			

Lark Buntings arrive to nest in grasslands. The black-and-white male's courtship display includes a flight 20-30 feet above ground. He then flutters to the ground while singing. The Bobolink is similar in appearance. Mother's Day The male does low display flights, singing while fluttering his wings.

Place salt and mineral away from water resources to provide for better range utilization.

Peak of White-tailed deer fawn births in Eastern SD.

April

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30						

June

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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

YouTube

2022 SD Leopold Conservation Award Winner

Bien Family • Veblen

Nate and Neil

"Neil has always made it very clear to me that this land will treat you well as long as you treat it well. We take great pride in managing our pastures so that we can get the most benefit from them. We rotate cattle around frequently to avoid grazing the pastures too much, and also give the pastures plenty of resting time so that they can recover. All of these management practices have been perfected by Neil over his lifetime, and now I am getting to benefit from learning from his experience."

- Nate Bien

JUNE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
May S M T W T F S 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 S M T W T F S 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	YouTube		**1** Peak of Mule deer fawn births in Western SD.	**2**	**3**
4	**5** World Environment Day	**6**	**7**	**8**	**9**	**10** Begin to seed summer annual forages.
11	**12**	**13**	**14** Flag Day	**15** Practice sustainable harvesting when gathering timpsila (prairie turnip) on the prairie.	**16** Watch grazing heights and rest periods carefully.	**17**
18 Father's Day	**19** Juneteenth	**20** Peak of pheasant and duck hatch.	**21** First Day of Summer	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**	

Move animals based on plant height NOT calendar dates.

- Graze annual forages at 18-24" height.
- Watch pasture for weeds and invasive species.
- Remember to enter information in your Record of Livestock Grazing.
- Evaluate shade/water needs and plan for next year.

Holt Family • Wecota

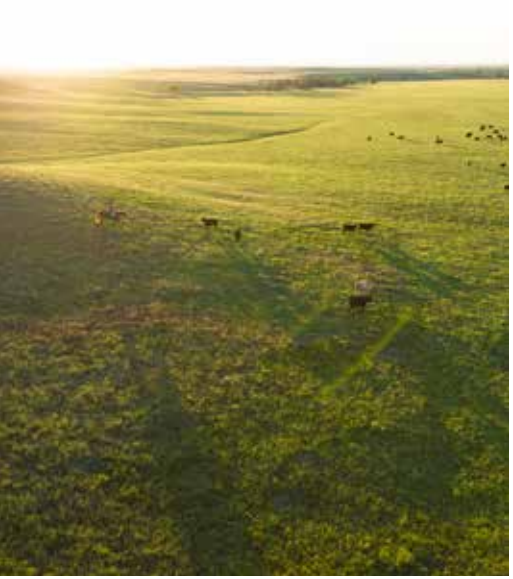
Gene, Kurt and Nick, (children) Ryan and Zane

"By having custom grazing enterprise, it was an effort to create a variable stocking rate. It gives us a lot more flexibility in the management of the grass to the best of its ability."

- Gene Holt

JULY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
June S M T W T F S 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** S M T W T F S 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	YouTube				**1**
			If drought conditions occurred in the 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.			
2	**3**	**4** Independence Day	**5**	**6**	**7**	**8**
			Check water sources frequently for condition, i.e., sediment or algae can reduce an animal's water intake.			
9	**10**	**11** World Population Day	**12**	**13**	**14**	**15**
			Thistles are best controlled at boot stage.			
16	**17**	**18**	**19**	**20**	**21**	**22** National Day of the Cowboy
		Collect flower seeds from annuals for next year's butterfly garden.				
23 **30**	**24** **31**	**25**	**26**	**27**	**28**	**29**







Rasmussen-Lehman 33 Ranch • Belvidere

Kate, Dan and Dawn Rasmussen and Amy, Elsie (niece), Blake, Patrick and Hudson Lehman

"The fact is that grass is our primary product and our primary thing that we raise is cattle. But the grass is more important than the cattle. And it's hard to put into words. I mean, it's so many things. We're just proud of this family and our grandparents, our mom and dad that gave us this opportunity and Dan, Blake, Dawn and I now get to see the next generation wanting to be involved, it's awesome."

- Amy Lehman

AUGUST

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
July S M T W T F S 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** S M T W T F S 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**
		As chokecherries begin to ripen, their fruit color will darken. Fruits are small and edible, but they have a hard pit inside that can not be ingested without proper preparation.				
6	**7**	**8**	**9**	**10**	**11**	**12**
		Remember to enter details in your Record of Livestock Grazing.			Contact the SD Grassland Coalition about the South Dakota Grazing School	
13	**14**	**15**	**16**	**17**	**18**	**19**
	Start planing for native seed harvest.			Continue to implement Drought Contingency Plan action items as needed.		
20	**21**	**22**	**23**	**24**	**25**	**26**
Consider cover crops as alternative forage; plant into small grain stubble.					Plan winter feed supply.	
27	**28**	**29**	**30**	**31**		YouTube

Walkes Family • Avon

Mary and Dave

"I had three goals with this project: improve the land, mentor regenerative ag to others, and raise grass fed meat for my family. We are meeting two of them now, but we are not quite there with grass fed meat from our land."

- Mary Walkes

SEPTEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
August S M T W T F S 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** S M T W T F S 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	YouTube		**Remember to enter details in your Record of Livestock Grazing.**	**1**	**2**
3	**4** Labor Day	**5**	**6**	**7**	**8**	**9**
10	**11** Patriot Day SD Grazing School	**12** Watch for migrating Monarch butterflies	**13**	**14**	**15**	**16**
17 Warblers migrate through the state on their way south. Many are neotropical migrants that winter in Central and South America, making migration stops in the Dakotas critical to their survival.	**18**	**19**	**20**	**21**	**22** National Native American Day	**23** First Day of Autumn
24	**25**	**26**	**27**	**28**	**29**	**30**

Continue to implement Drought Contingency Plan action items as needed.

Target pastures dominated by cool-season species if green-up occurs in order to reduce pressure on native grasses.

Kammerer Family • Piedmont

Karlie, Jimmie, Riley, Kymbal, and Katelyn

"We had to decide what our priorities were and we decided that we needed to be better at grazing management and stockmanship, so that's where we threw our effort. It was a minimal cost to get into that. We learned as we went through the process what we were doing and how to graze differently."

- Riley Kammerer

OCTOBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
		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.				Conduct annual soil tests on fertilized pasture.
8	9	10	11	12	13	14
	Native American Day (SD) Columbus Day			National Farmer's Day		
15	16	17	18	19	20	21
If you would like improvements on your grazing lands, get free one-on-one advice from the USDA Natural Resources Conservation Service. Application for financial assistance for a Conservation Plan through Farm Bill programs is continuous					Reminder! Tribal Lease Payments are often due around November 1. Contact your local office to ensure you're prepared for a timely payment.	
22	23	24	25	26	27	28
		Continue to implement Drought Contingency Plan action items as needed.				
29	30	31				
		Halloween				

September

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31						

November

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19	20	21	22	23	24	25
26	27	28	29	30		

YouTube






Blaalid Family • Mitchell

Mike, Libby, Hazel, August, Oliver, and Thea (also pictured Andrew Olson (brother-in-law))

"Cows, I think, are probably one of the most important tools we can use to rebuild our soil from all the destruction we've caused. I think that it's very important to keep them on the landscape. So, in order to do that, we need grass. And in order to keep the grass, we have to show value to the landowner."

- Mike Blaalid

NOVEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
October S M T W T F S 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** S M T W T F S 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	YouTube	**1** Allow livestock to graze alternative forage sources, such as cover crops or cornstalks, to allow a rest period for pastures.	**2**	**3**	**4** Try strip grazing corn stalks to reduce trampling.
5 Daylight Savings Ends	**6** Prepare water systems and equipment for freezing temperatures.	**7** Watch for Snowy Owls as they move south into South Dakota during years when food may be scarce farther north.	**8**	**9**	**10**	**11** Veterans' Day
12	**13**	**14** Evaluate end of year pasture use.	**15**	**16**	**17** Prepare your financial statements for your lender and yourself.	**18**
19 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.	**20**	**21**	**22**	**23** Thanksgiving	**24**	**25**
26 Start the tax planning process.	**27**	**28**	**29**	**30**		






Anderson Family • Lemmon

Sadie, Kayla, Drew, Henley, and Emmie

"We are innovative. We will try something different. We're not afraid to fail. It's just a learning experience. It's not necessarily a failure. It's just we're going to learn from it and we're going to move on."

- Kayla Anderson

DECEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
November S M T W T F S 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 2024** S M T W T F S 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	YouTube			**1**	**2**
				Check pastures and the SD Drought Tool for 2022 forage production forecast.		
3	**4**	**5**	**6**	**7**	**8**	**9**
		World Soil Day		Pearl Harbor Remembrance Day		
10	**11**	**12**	**13**	**14**	**15**	**16**
	National Audubon Society's Christmas Bird Counts completed throughout the state. These counts have been performed since 1901, making this the longest running Citizen Science Bird Project in the U.S.					
17	**18**	**19**	**20**	**21**	**22**	**23**
	Monitor body condition score trends of your herd.			First Day of Winter		
24 Christmas Eve **31** New Years Eve	**25**	**26**	**27**	**28**	**29**	**30**
	Christmas Day		Did you remember to take a vacation this year? Plan for next year.			

HOLISTIC MANAGEMENT

SAVORY FRAMEWORK FOR HOLISTIC MANAGEMENT

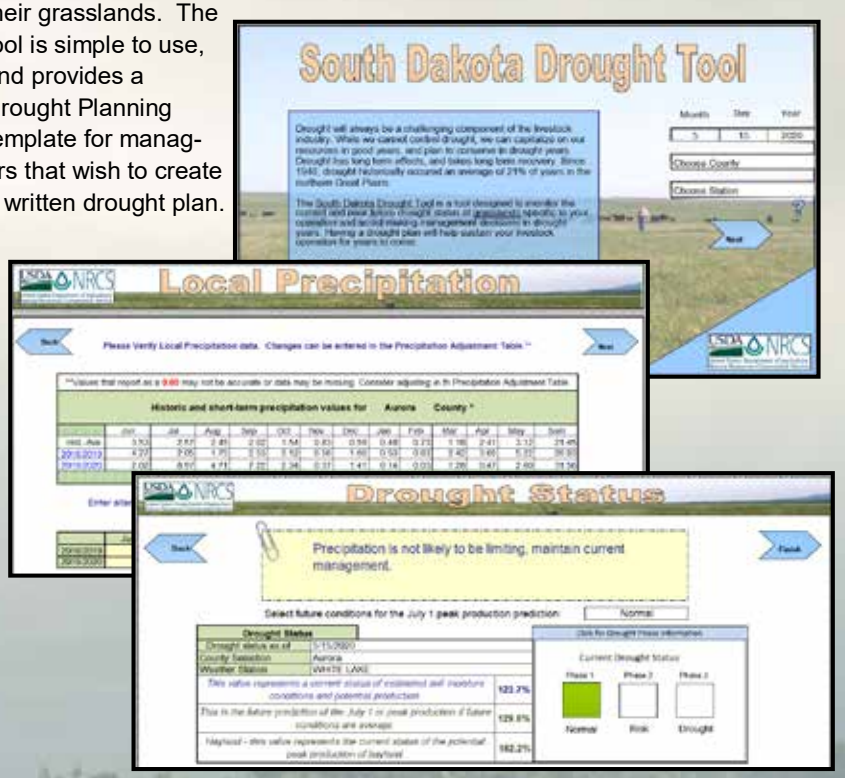
WHOLE UNDER MANAGEMENT	DECISION MAKERS	RESOURCE BASE	MONEY
Holistic Context	Statement of Purpose Quality of Life Forms of Production Future Resource Base		
Eco system Processes	Community Dynamics — Water Cycle — Mineral Cycle — Energy Flow		
Conventional Decision Making	Objectives	Goals	Vision — Mission
Tools	Human Creativity — [Technology — Fire — Rest — Grazing — Animal Impact — Living Organisms] — Money & Labor		
One or More Factors	Past Experience — Expert Opinion — Research Results	Expediency — Compromise	Cultural Norms — Cost, Etc.
Testing Questions Objectives and Actions	Cause & Effect — Weak Link • Social • Biological • Financial — Marginal Reaction	Gross Profit Analysis — Energy/Money Source Pattern Of Use	Sustainability — Gut Check
Management Guidelines	Learning & Practice — Organization & Leadership — Marketing	Time — Stock Density & Herd Effect — Cropping	Burning — Population management
Processes Unique to Holistic Management	Holistic Financial Planning — Holistic Planned Grazing	Holistic Land Planning	Holistic Ecological Monitoring
Feedback Loop	Plan → Monitor → Control → Replan (Assume Wrong with Environment & Financials)		

"Agriculture is not crop production as popular belief holds – it's the production of food and fiber from the world's land and waters. Without agriculture it is not possible to have a city, stock market, banks, university, church, or army. Agriculture is the foundation of civilization and any stable economy." – Allan Savory

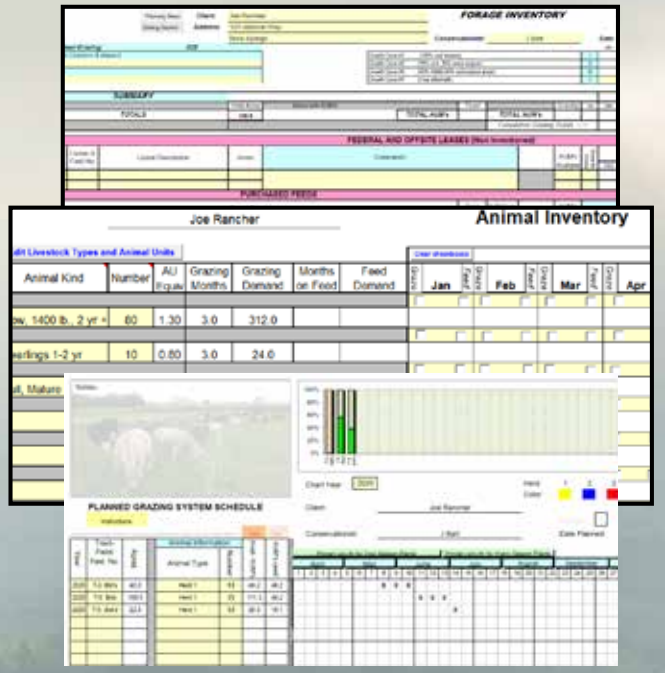
Grassland Planning Tools Available from SD NRCS

SD NRCS has developed Excel-based tools that can be useful to managers when planning management for their grasslands.

The **South Dakota Drought Tool** utilizes weather station data, historical averages, and state-wide clipping data to determine a percent of normal calculation for grassland managers to use for determining the production status of their grasslands. The tool is simple to use, and provides a Drought Planning template for managers that wish to create a written drought plan.



The **SD Grazing Tool** includes instructions on how to build a forage inventory based on Web Soil Survey soils data, create an animal inventory, and match the forage resources to the animal resources in order to build a balanced grazing plan. The tool also provides multiple grazing plan formats depending on the grazer's experience.



These tools are available on the SD NRCS website. Search "SD NRCS". Click on "Range & Drought Information" on the right hand side of webpage under "Popular Topics" to find the SD Drought Tool, SD Grazing Tool, and other useful planning documents.

Grassland Planning Tools and other useful information are taught at the SD Grassland Management School, the SD Grazing School and the SD Soil Health School. These schools provide producers the opportunity to network and learn new ways to increase efficiency and improve their operations. Visit www.sdgrass.org or the www.sdsoilhealth.org web sites for event updates.

The contents of the South Dakota Grassland Planner calendar pages are now available online as a Google Calendar. Find the new calendar with the latest updates and events on Google Calendar at https://bit.ly/SDGrasslandCalendar.

Grassland Planning

Through this Grassland Planner, the U.S. Department of Agriculture NRCS is working with the South Dakota Grassland Coalition (SDGC) and other partners to improve the health of grassland resources. The NRCS, SDGC, and South Dakota State University 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 need for financial assistance, staff are available through NRCS and SD Conservation Districts, and other partners such as the SD Grassland Coalition and 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.

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

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

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

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

SD Department of Agriculture and Natural Resources
www.danr.sd.gov
(605) 773-3375

Ducks Unlimited
www.ducks.org/southdakota

South Dakota Grassland Coalition
www.sdgrass.org

South Dakota Department of Game, Fish and Parks Wildlife Division
www.gfp.sd.gov
(605) 223-7700

Pheasants Forever
www.peasantsforever.org
(605) 692-6006

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

U.S. Fish and Wildlife Service - SD Partners for Fish and Wildlife
www.fws.gov/partners
(605) 697-2500

South Dakota Soil Health Coalition
www.sdsoilhealthcoalition.org
sdsoilhealth@gmail.com

South Dakota State University (SDSU) Extension Service
extension.sdstate.edu
(605) 688-4792

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Joe Dickie

Design
Beth Bird

South Dakota Grasslands eCalendar

An eCalendar that can help you take your ranch management to the next level by providing helpful tips and reminders right at your fingertips!

Conservation Districts | South Dakota Grassland Coalition | USDA United States Department of Agriculture Natural Resources Conservation Service | South Dakota Soil Health Coalition

How to integrate within an existing platform:

Google Calendar

1. On your computer, open your Google Calendar.
2. On the left, next to Other Calendars, Click Add+ From URL.
3. Visit www.indianag.org/ncalendar and copy the Google Calendar URL.
4. Enter the Calendar URL in the field provided.
5. Click Add Calendar. The calendar will appear on the left side under Other Calendars.

Outlook Calendar

1. Go to www.indianag.org/21calendar and copy the iCal URL for the Outlook Calendar.
2. Go to your personal Outlook Calendar and right-click *Shared Calendars* > *Add Calendar* > *From Internet*
3. Paste the iCal URL.
4. Choose Yes when asked to subscribe to updates.
5. The SD Grasslands eCalendar will now be integrated within your personal outlook calendar.

iPhone Calendar

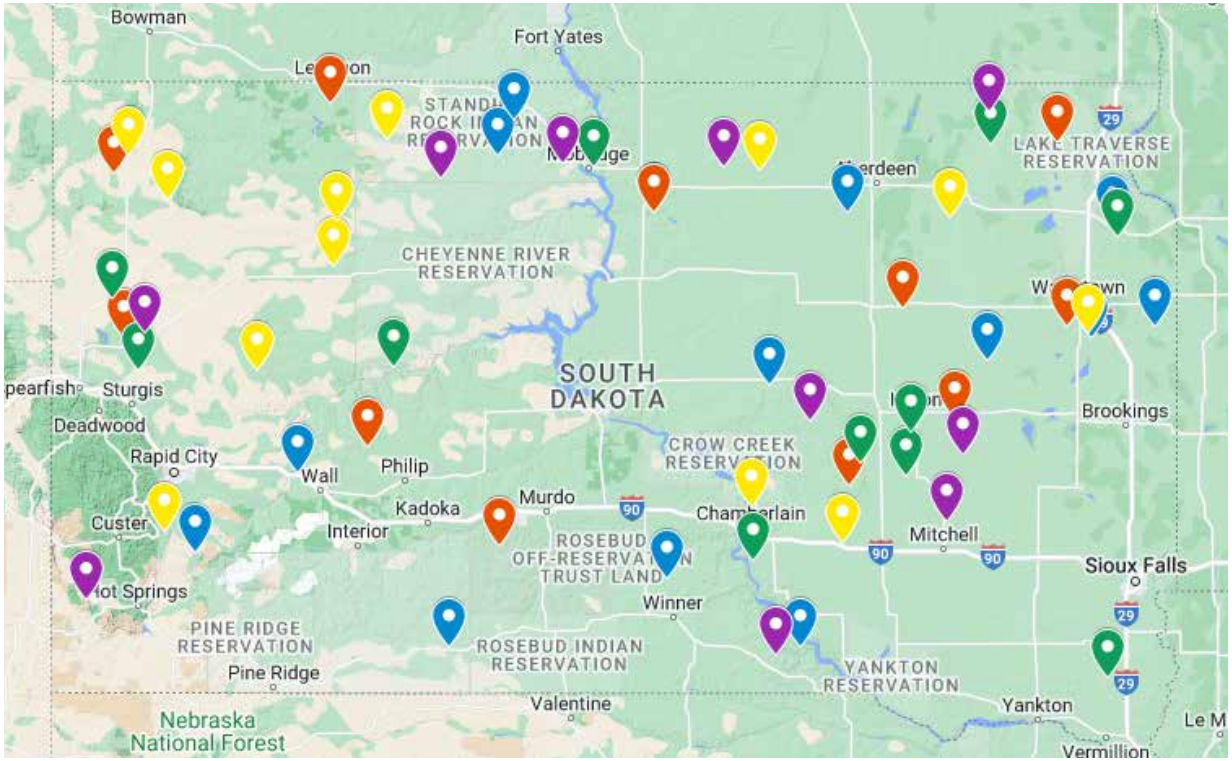
1. On your iPhone, go to www.indianag.org/ncalendar and copy the iCal URL for your iPhone Calendar.
2. Go to *Settings* > *Mail* > *Accounts* > *Add Account* > *Other* > *Add Subscribed Calendar.*
3. Paste the iCal URL.
4. The SD Grasslands eCalendar will now be integrated within your personal iPhone Calendar.

For questions, please contact

Sha'Teal Pearman, IAC Natural Resources Program Assistant

shateal@indianag.org

South Dakota Grassland Planner Featured Operators



The video stories of the "Our Amazing Grasslands" families and operations that have been featured in the 2018, 2019, 2020, 2021 and 2022 South Dakota Grassland Planners can be viewed on the USDA NRCS South Dakota YouTube channel at *www.youtube.com/NRCSSouthDakota*. Search "Amazing Grasslands" to see all of the stories or search for the last name for a particular story.

YouTube

2018

Schell Ranch, Wasta
Steve and Paula Livermont, Martin
Sara and Rich Grim, Bonesteel
Darin and Jessica Michalski, Willow Lake
Ron and Carol Brownotter, Bullhead
Tracy Rosenberg, Marvin
Sharon and Dan Anderson, Meadow
Candice and Dean Lockner, Ree Heights
Chad and Heidi Schooley, Castlewood
Mimi Hillenbrand & Moritz Espy, Rapid City
Jorgenson Land & Cattle, Ideal
Hamann Family, Clear Lake

2019

Jody and JoAnn Brown, Faith
Bart and Shannon Carmichael, Faith
Dan and Cindi Conner, Belle Fourche
Stuart and Lisa Schmidt, Keldron
Sandy and Jacki Limpert, Buffalo
Gary and Amy Cammack, Union Center
Ausland Family, Webster
Rittberger Family, Hermosa
Charlie and Tanya Totton, Chamberlain
Suelflow Family, White Lake
Rohrbach Family, Roscoe
Little Family, Castlewood

2020

Chuck and Koreen Anderson, Lemmon
Jeannie Franceus, Wessington Springs
George and Suzanne England, Midland
Jeff and Marci Dell, Nisland
Lance Vilhauer, Mina
Johnson Family, Frankfort
Hove Family, Sisseton
Fran Fritz, Iroquois
Rick and Karen Smith, Hayti
Slovek Ranch, Philip
Gilbert Family, Buffalo
Perman Family, Lowry

2021

Erickson Family Ranch, Langford
Bendigo Family Ranch, Howes
Turtle Peak Ranch, Wessington Springs
Summit Lake Partnership, Summit
Shubeck Family, Centerville
Blair Bros. Angus Ranch, Vale and Belle Fourche
Mizera Family, McLaughlin
Grandview Angus Ranch, Chamberlain
Davis Family Ranch, Forestburg
Bohlander Family, Mobridge
The Wind Ranch, Newell
Cain Creek, Beadle Co. Conservation Dist., Huron

2022

Smikle Family, Herrick
Bad Warrior Family, Dupree
Moore Family, Artesian
Hanson Family, Letcher
Boyland Family, Newell
Neuharth Family, Ft. Pierre
Thompson Family, McLaughlin
Effling Family, Britton
Hollenbeck Family, Edgemont
Haerter Family, Hosmer
Magness Family, Miller
Lower Brule Tribal Ranch, Ft. Pierre

South Dakota Grazing Exchange

sdgrazingexchange.com

Connecting Crop and Livestock Producers to Improve Soil Health

Do you have pasture, native grass, crop residue or cover crops available to be grazed?

Do you need extra grazing land or forage for your livestock?

The South Dakota Grazing Exchange website, created by the South Dakota Soil Health Coalition, is a free, publicly accessible map that offers a platform for producers to connect throughout the state and region, with information categorized based on forage and livestock grazing opportunities.

Integrating livestock onto cropland and proper management of grasslands are a key part of increasing overall soil health, so we created an online portal to help livestock producers find the right land for their herd, or landowners and operators find the right herd to graze their land.

South Dakota
Soil Health Coalition

NOLO
NON OPERATOR LAND OWNER

IT TAKES TWO

NOLO

FEATURING:
Barry Ploog
&
Mike Beer

When the landowner and tenant are on the same page, soil health advances come more quickly and are longer lasting.

"My sons weren't interested in farming so when the opportunity came to rent out I picked Mike. I could see the job he was doing and how beneficial it was to the ground."

Learn how non-operator landowner (NOLO) Barry Ploog and tenant Mike Beer's pathway to soil health is working out. Their story, and stories of 6 more NOLO/tenant partnerships, are being told in their own words through video and short stories online. Check them out, as well as thoughts on soil health from women landowners, at www.nolosd.org.

South Dakota Grasslands valuable in so many ways

Food, Water, Wildlife to Way of Life

Privately owned range and pasture lands makes up over 27% (528 million acres) of the total acreage of the contiguous 48 states, and these lands constitute the largest private lands use category, exceeding both forest land (21%) and crop land (18%). South Dakota's working rangelands help provide food and fiber for the entire country, and also have recreation opportunities like hunting, bird viewing, hiking, riding, and exploring historical landmarks. The grasses and forbs are also home to a wide variety of wildlife species.

"It's the plants that feed the livestock and offer food and nesting for wildlife, and the soil that supports and feeds those plants, that are the foundation for profitable agriculture and a sustainable environment," says NRCS State Conservationist Tony Sunseri. "If you think about it, everything from storing water and carbon in the ground to supporting everything above ground depends on the health of our soil and grasslands. Really, making a decent living, sustaining surroundings with a diversity of both plants and animals, clean water, the very way of life comes back to healthy grasslands. And that starts with healthy soil."

Agriculture is the life blood of South Dakota. Part of the reason: the state's grasslands support nearly 4 million head of cattle and calves and hundreds of producers.

About 40 species of birds are considered grassland specialists, and more than 300 species either live permanently in grasslands or migrate through them.

A broad diversity of wildlife inhabits the Great Plains region! You'll find badger, prairie chicken, burrowing owl, pronghorn, scaled quail, dung beetle, ornate box turtle, and scissor-tailed flycatcher in this grasslands region.

Rangelands store 12% of global terrestrial carbon stocks. Healthy native plants in rangelands send their roots deep into the soil to help store carbon. There is growing evidence that soils on agricultural lands, especially grasslands like those in South Dakota, can store a considerable amount of carbon dioxide.

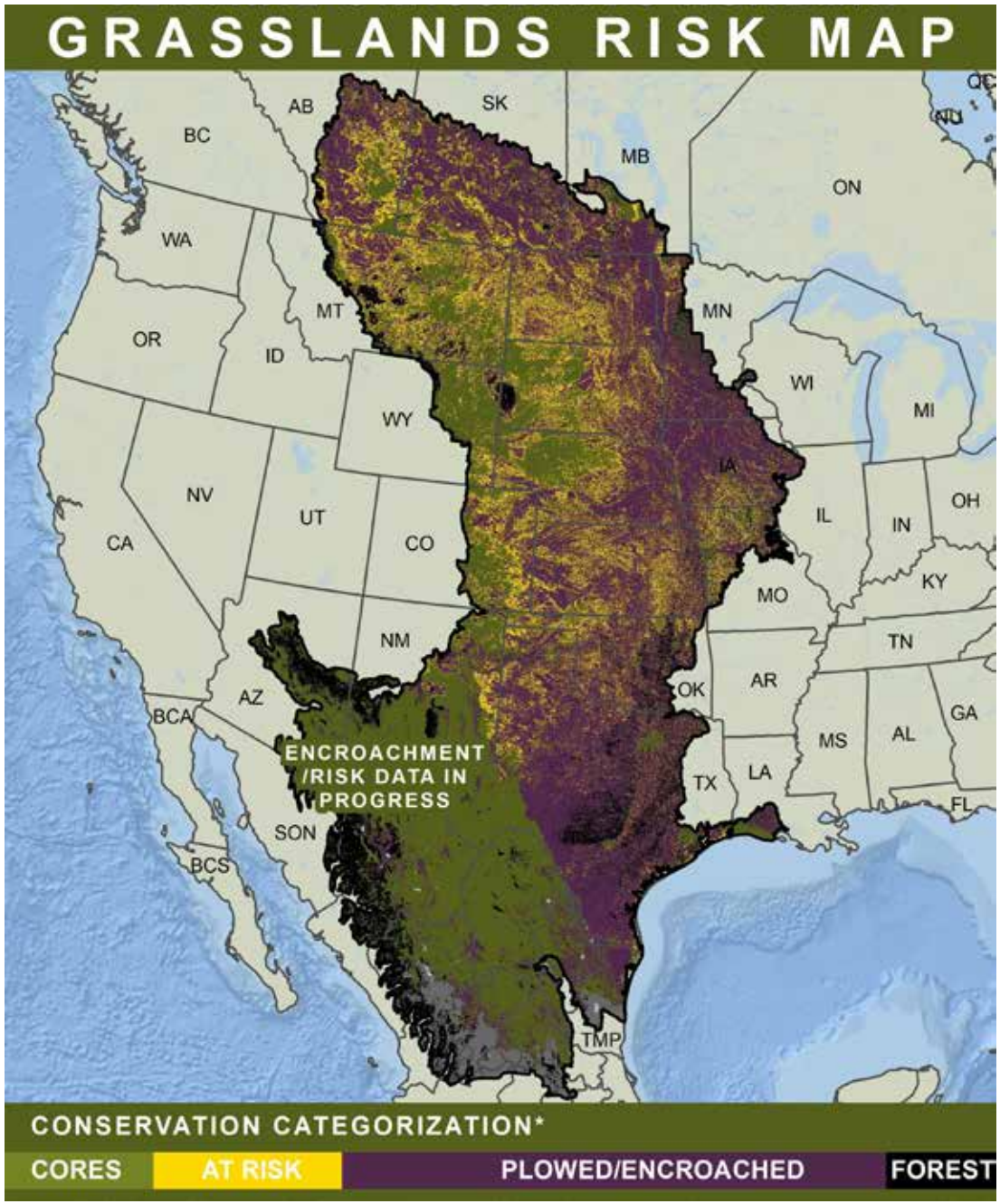
Healthy grasslands favorably impact both water quality and quantity. They build healthy soils to infiltrate rainfall, reduce susceptibility to drought and flooding, and fill underground reservoirs. It's been said that well-protected soil is the greatest storage of fresh water––more than all the lakes and rivers in the world.

From Canada to Mexico

Grasslands, habitat are being lost at an alarming rate

Fewer than 40 percent of the 550 million acres of historical grasslands that once stretched from Alberta to Mexico remain today. Most of these grassland acres were converted to cropland, others to energy development or other uses. As these tallgrass, mixed grass, shortgrass prairies, and desert grasslands are lost, so are the wildlife that depend on them.

Not surprisingly, grassland species are among the most imperiled group of birds in the United States: Total populations have declined more than 40 percent since 1966, and some species, like the Lesser Prairie-Chicken, hover at the brink of extinction. Bison, antelope, and monarch butterflies are only a few examples of the other wildlife that face a diminished future if we allow remaining grasslands to disappear or degrade. Human health and livelihoods are also entwined with the fate of grasslands. Pollinating insects thrived in fields of wildflowers and native grasses, while the deep roots of native plants trapped nutrients and water—and keep prairies resilient through natural cycles of drought, fire, grazing, and storms.



Central Grasslands Roadmap:

Working Together Towards Resilient, Connected Grasslands and Communities

If you're concerned about South Dakota's grasslands, you're not alone. As a matter of fact, you're invited to join in a grassland and community improvement collaborative effort that involves dozens of organizations and agencies across 3 countries.
The Central Grasslands span across more than 500 million acres of North America, from Mexico through Canada, where the health of grasslands continues to decline.

Roadmap Launch in 2020

The Central Grasslands Roadmap was launched in 2020 with a virtual summit. Its focus was to define a vision and set high level priorities to guide innovative conservation for the benefit of grassland birds, pollinators and mammals, and to ensure viable human communities across North America's grassland landscape. For two years, Roadmap working groups have been collaborating on policy, communications, and tools needed to help save and sustain our grassland landscapes and connected communities for generations to come. In May of 2022, a second summit was held in Ft. Collins. Representatives from South Dakota organizations and agencies with an interest in grasslands were among the more than 200 organizations from Mexico, Canada, the U.S., and Indigenous Nations, that came together for two days.

The Grassland Roadmap Vision

The vision over the next 10 years for the Central Grasslands Roadmap is to witness thriving Indigenous and rural communities and economies, with flourishing ecosystems of soil, plants, and wildlife on millions of acres of working lands that have healthy grazing populations, with resilient and connected habitat. That will come about in part through dynamic and multi-faceted approaches to sustainable grasslands management, supported by public policies and investments.. The vision includes a sustainable agriculture, energy development, and rivers and wetlands that support habitat, aquifers, production and people.

Scorecard Goals

"The Central Grasslands Roadmap is all about bringing together all the stakeholders who have an interest in grasslands, to boost conservation of North America's Central Grasslands through more collaboration," says Tony Sunseri, state conservationist for the USDA Natural Resources Conservation Service in South Dakota. NRCS is one of the two dozen planning partners for the effort.

The Roadmap's participating organizations have agreed on 7 broad goals:

1. **Community Support:** Each year, Indigenous/First Nation, ejido, and rancher communities across the biome will report on their ability to sustain their working operations and access sufficient financial and technical assistance resources to support their land stewardship decisions.
2. **Landscape Conservation:** By 2032, hundreds of millions of acres of grass will be improved, restored, or kept intact across the biome.
3. **Species:** By 2032, wildlife populations will remain stable if common, become stabilized if declining, and have population trends reversed and recovering if in steep decline, understood through a chosen suite of insects, birds, herpetofauna, and mammals.
4. **Water:** By 2032, extractions from groundwater and surface water sources will be reduced as necessary to sustain dynamically stable groundwater levels, baseflows, and lake levels.
5. **Soil:** By 2032, comprehensive soil health will be improved to increase drought resilience, availability of livestock forage and wildlife habitat, and net carbon sequestration.
6. **Food Supply:** Food companies, agribusinesses, and supply chain actors, immediately work to increase the positive impacts of agricultural production and stop grassland conversion.
7. **Low-Impact Production:** Transportation and energy industry companies immediately work to ensure intentional siting of energy, transportation, and other commercial or industry developments for all projects including wind, solar, oil, gas, coal, and transmission.

For much more detailed information on the Central Grasslands Roadmap activities, including how you can become involved, visit *www.grasslandsroadmap.org/.*

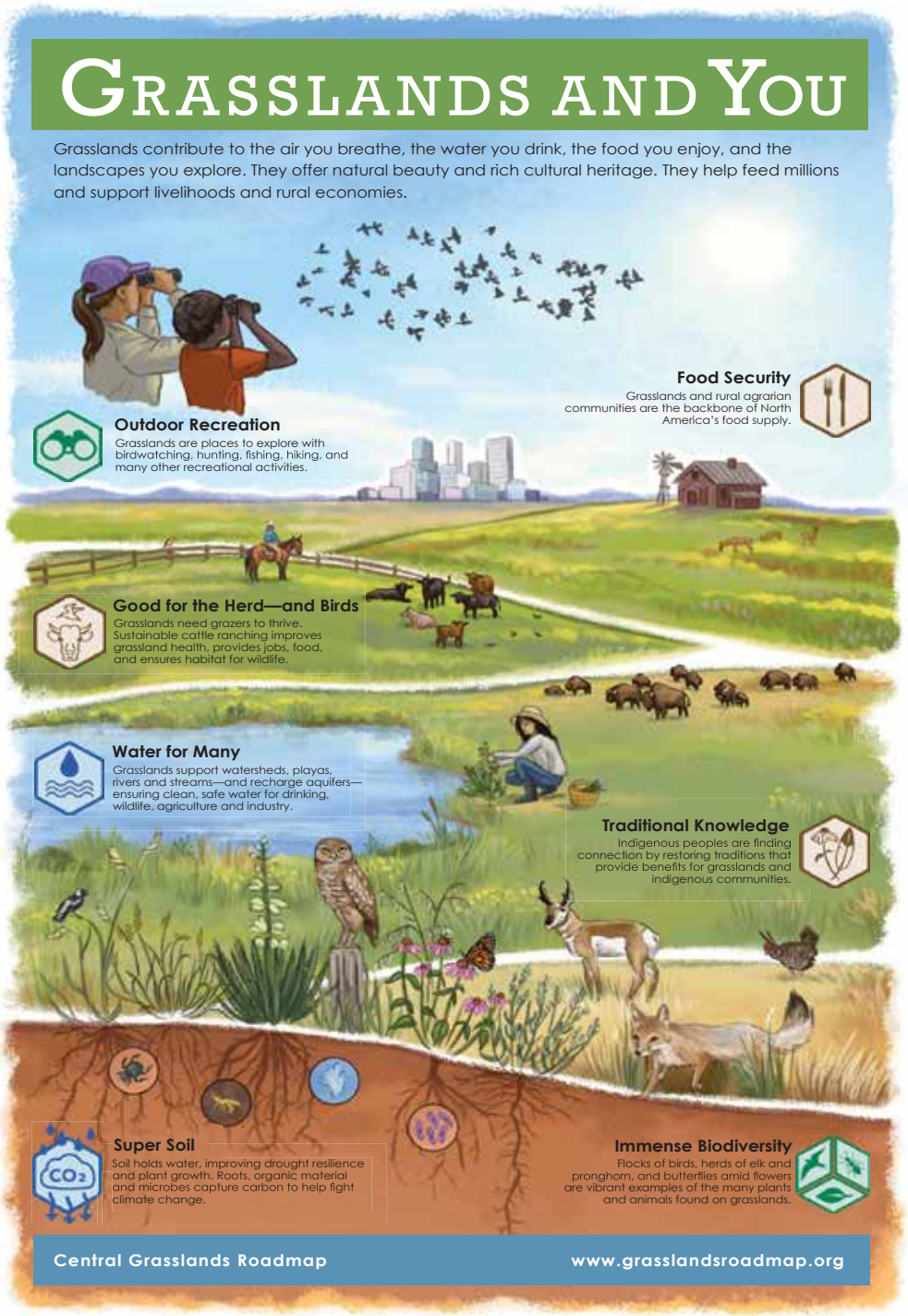
Central Grasslands Roadmap:

Educational materials available

You can help inform and inspire people of all backgrounds about the many benefits that grasslands provide for human and wildlife communities.

Join the Roadmap's Grasslands and You Campaign. Visit the campaign resources page for downloadable images, posters and information that can be shared with friends, family and supporters.

Download materials, including the poster shown at right, at *www.grasslandsroadmap.org/grasslandsandyou*.



Woody encroachment: Major Threat to Grasslands

Best advice: Burn before they get big

A burn of invasive red cedars in 2011 near Chamberlain (above) resulted in reclaiming some grassland for grazing (below). Thousands of Eastern red cedar trees continue to impair grazing on private grasslands along the Missouri River corridor in southern and central South Dakota.

South Dakota grasslands—vital to cattle, birds and ranch resiliency—are losing out to an eastern red cedar invasion from the South. In fact, ranchers are losing 30 to 75 percent of their rangeland in areas along the Missouri River.

"Absolutely nothing will grow under those thick canopied cedar trees," says Brule County rancher Doug Feltman. "We've lost over half of our cattle grazing."

Doug Feltman

Eastern red cedar encroachment is often overlooked because the pasture takeover is slow. But once established it can reduce forage for livestock and wildlife by 75 percent or more. Some ranchers, including Feltman, are turning to prescribed burning to reclaim pasture for their cattle and their economic livelihood.

"It will take less work, less equipment, and there's less danger if you burn small trees," Feltman says. "You have to respect fire, but you don't have to be afraid of it. If you write a prescribed burn plan and then follow that plan, you're going to reduce your risk."

"If you have a pasture that is full of just little cedar trees that are just starting to come, then, fire will take care of that and it'd be much more cost-effective with a fire then versus trying to go out and clip all the little cedar trees that are one, two, three foot," says Sean Kelly, SDSU Extension Range Management Field Specialist at Winner.

Fire is an ecological process and recognized control method, but many ranchers are hesitant to use it because of the fear of a runaway fire.

Good planning with professional help can substantially reduce risks of runaway fires. A burn plan that carefully details what will be done, when, and under what conditions, is essential to a safe burn. NRCS and SDSU Extension can help.

From Mexico to Canada:

Grasslands are increasingly at risk

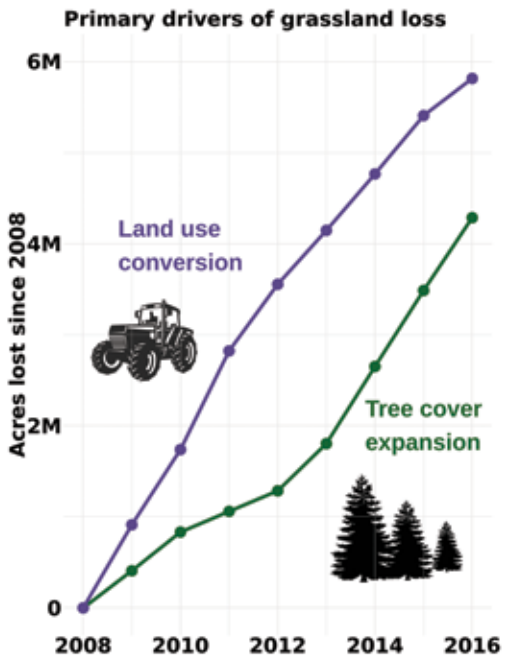
"The data is really clear on this. The two biggest threats to grasslands biome in the Great Plains are land use conversion and woody species invasion," says Dr. Dirac Twidwell, Associate Professor at the University of Nebraska.

"They are now occurring at the same rate. We're talking 130 million acres of grassland at risk from conversion with tractors or expansion of tree cover. We're suffering from biodiversity loss from these—and we're likely to really struggle with this. There's no doubt about it, no group of rangeland professionals have had to deal with this scale of conversion and woody species pressure."

Prevent Woody Encroachment

Twidwell says it's very important to prevent woody encroachment rather than let it become a problem to address after spread. "Instead of really expensive treatments after we have a major concern, we need to get out in front of it, and anchor in intact grasslands, rather than constantly trying to manage re-invasion," he says.

"We're starting to better understand that the approach of trying to restore grasslands that have been overrun with woody species is doomed to fail," Twidwell says. "The number one predictability factor for woody encroachment is proximity to the seed source.

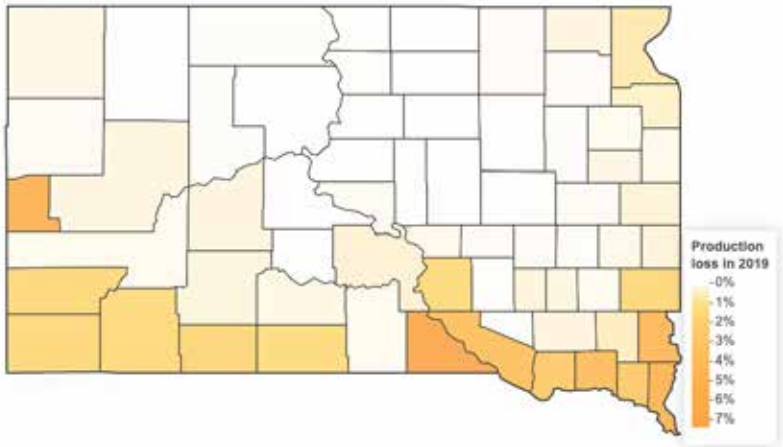


If you clear even small Cedar trees from grasslands mechanically, there are seeds left all over that rangeland. So that's going to grow new trees, which will have to be cut again. Instead of restoring areas that have been lost to woody encroachment, It's been proven it's better to reduce that risk in the first place. We have to manage to disrupt seeds, rather than waiting to remove trees."

South Dakota

Rangeland Production Lost to Tree Encroachment

Rangeland Production Losses Map



The map above depicts percent production loss in 2019 relative to what would have been achievable had tree cover not changed since 1990.

Tree encroachment is a dominant change agent in western U.S. rangelands; tree cover has increased by 50% (77,323 km2) over 30 years, with more than 25% of U.S. rangelands experiencing sustained tree cover expansion. Since 1990, roughly 300 Tg of herbaceous biomass has been lost, totaling $5 billion in foregone revenue to small agricultural producers.

Rangeland Production and Tree Cover Summary, South Dakota

Rangeland production in 2019	24,246,024 tons
Rangeland production losses in 2019	145,352 tons (0.6%)
Cumulative rangeland production losses since 1990	2,076,178 tons
Tree cover in 2019	751,548 acres
Tree cover change since 1990	+232,627 acres
Tree cover percent in 2019	2.96%

Report generated on 2022-01-20 from the Working Lands for Wildlife (WLFW) science team. The team maintains a woodland expansion database to track annual tree encroachment and resulting losses of herbaceous production in rangelands.

Land Use Conversion: Major Threat to Grasslands

Grasslands are the most endangered ecosystem in the world

The loss of Amazon forestland has been widely publicized, and many people recognize that imposing loss of an important resource. Yet, the 20 percent of Amazon forests that have been lost pale in comparison to the loss of temperate grasslands worldwide. Roughly half the world's grasslands have been lost! Conversion to cropland or other uses is one of the primary reasons; in 2019 alone, 2.6 million acres of North American grasslands were plowed under, according to a World Wildlife Fund report.

According to the World Wildlife Fund, only 53 percent of the Great Plains area's grassland remains intact – about 42 percent of the grasslands have been converted to crops or other uses.

That loss has been felt within South Dakota. A 2015 study based on manually-interpreted digital aerial photography found a net grassland loss of 4.6 million acres resulting from cropland expansion in the state of South Dakota over the six years from 2006 to 2012.

Tyler Lark, a scientist at the University of Wisconsin's Center for Sustainability and the Global Environment, estimates more than a million acres of grasslands in the United States are continuing to be converted to cropland each year.

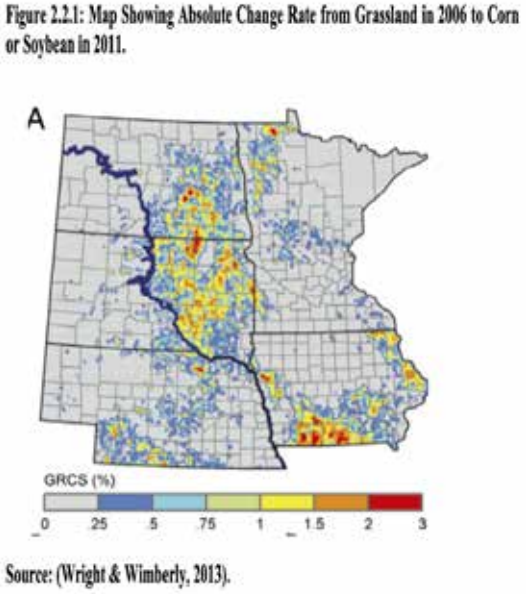
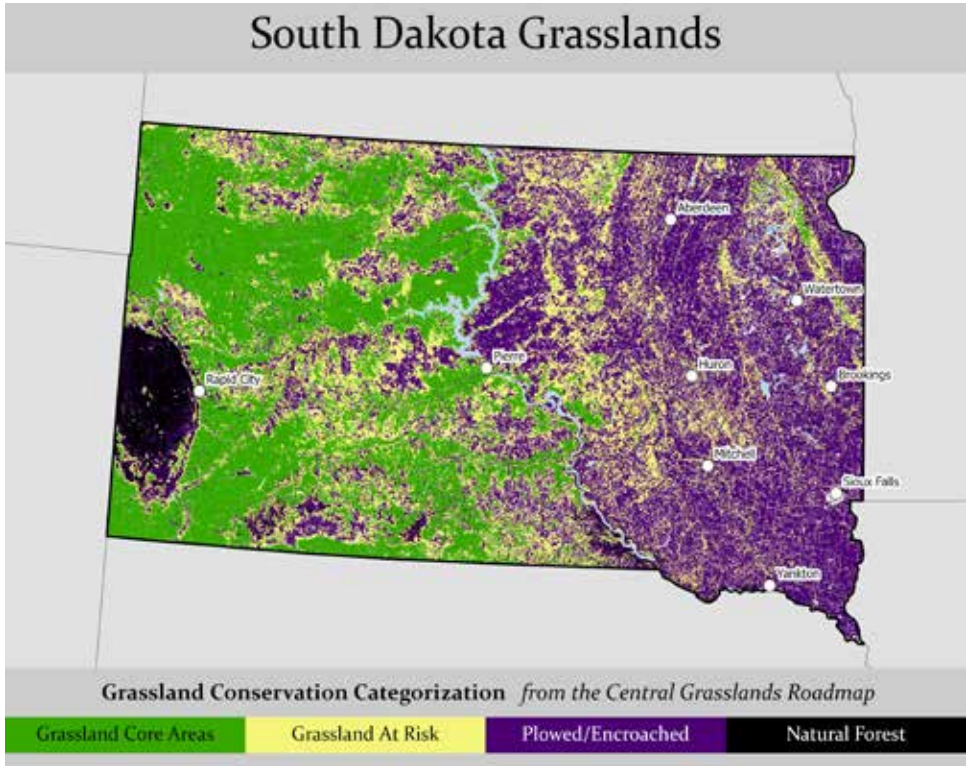


Figure 2.2.1: Map Showing Absolute Change Rate from Grassland in 2006 to Corn or Soybean in 2011.

Source: (Wright & Wimberly, 2013).

Between 2008 and 2016, as corn prices spiked, U.S. farmers responded by converting more than 10 million acres to crops. Eastern South Dakota has been among the leading areas for rate of conversion from grassland to corn and soybeans, as shown by the rate of change from grassland to corn or soybeans from 2006 to 2011 (graphic on left).



Much of the grassland in eastern South Dakota has been converted to cropland or another use, or encroached upon with invasive woody species (purple). Most of the remaining grassland is at risk. In the west, much of the native grassland is still intact (green), but many acres are at risk (yellow).

The Opposite Approach to Converting Grass into Croplands:

Return Marginal Croplands to more suitable Grasslands land use

Highmore, South Dakota rancher Jim Faulstich believes all that conversion to crops is a big mistake. For more than 30 years, he's been taking the opposite approach, seeding more than 700 acres of what was marginal cropland on his Daybreak Ranch back to native grasses. It now grows lush grass for his cow herd as well as habitat for wildlife.

He says profitability on his ranch turned around when he began focusing on his land as a natural resource with the best use being growing grassland. "Converting the land back to grassland made our operation more drought resistant," Faulstich says.

His priority has been to manage the grassland resource so it can bounce back after a drought. He's liquidated cow herds to the point necessary to protect his grasslands.

Faulstich uses grazing practices that include keeping good ground cover, and rotationally grazing or management intensive grazing versus season-long grazing, and timing and rest.

"All those things are so key to managing your grass to where you have a strong and diverse mix out there," Faulstich says. "One of the things we've emphasized is increasing our warm season grasses. They're a lot deeper rooted than cool season grasses, and they can really shine in a dry year. So, if you have a diverse mix out there, warm and cool seasons, and a lot of forbs and legumes, it just makes your operation a lot more resilient."

Jim Faulstich

Returning cropland to grassland at Daybreak Ranch and managing to optimize the grassland resource has returned dividends to Jim Faulstich in the form of productive pastures for both cattle and hunting operations.

RECORD FOR LIVESTOCK GRAZING

Name: _____

Year: _____ Farm No: _____ Tract No: _____

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).

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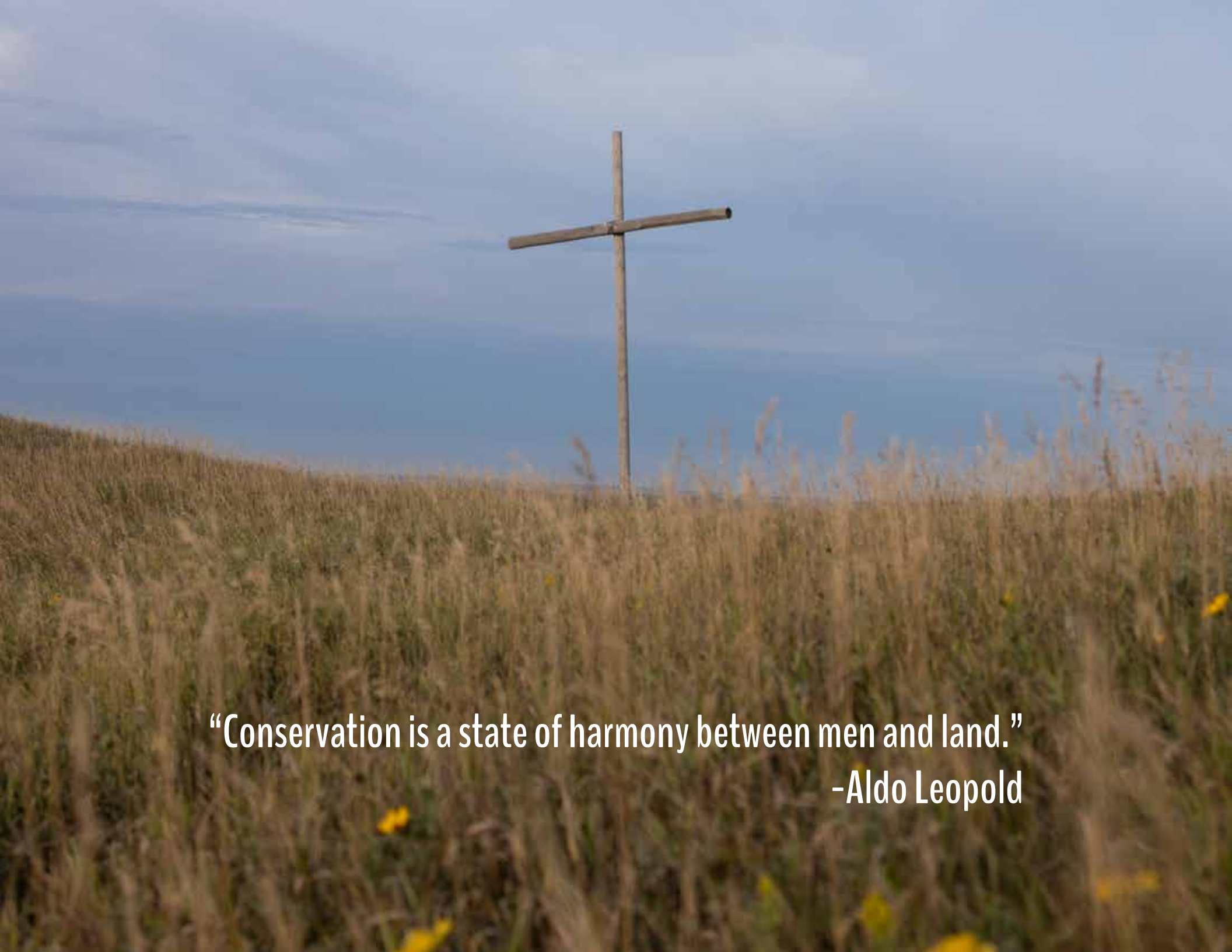
“Conservation is a state of harmony between men and land.”
-Aldo Leopold