

2023

Plowprint



The destruction of grasslands across the Great Plains continues at an unsustainable pace.

WWF's most recent Plowprint analysis found that **in 2021, the year that this report analyzes, plow-up destroyed 1.6 million acres of grasslands across the US and Canadian portions of the Great Plains.** Within the Northern Great Plains region of the ecosystem—currently one of the world's four most intact temperate grasslands—the number of plowed acres was over 400,000 acres in 2021 alone. **In total, 32 million acres have fallen to the plow since 2012,** when WWF first began tracking grasslands conversion across the region.

**1.6 MILLION ACRES
PLOWED
IN A SINGLE YEAR**

(An area larger than the state of Delaware)

There is, however, opportunity to change course: Despite all that has been lost, we still have a lot left to fight for. According to WWF's Plowprint analysis nearly 377 million acres across the Great Plains, much of which is privately owned and stewarded, remains in grass cover. **One of the greatest opportunities we have to ensure that the grasslands of the Great Plains continue to exist, benefiting both people and wildlife, is policy.**

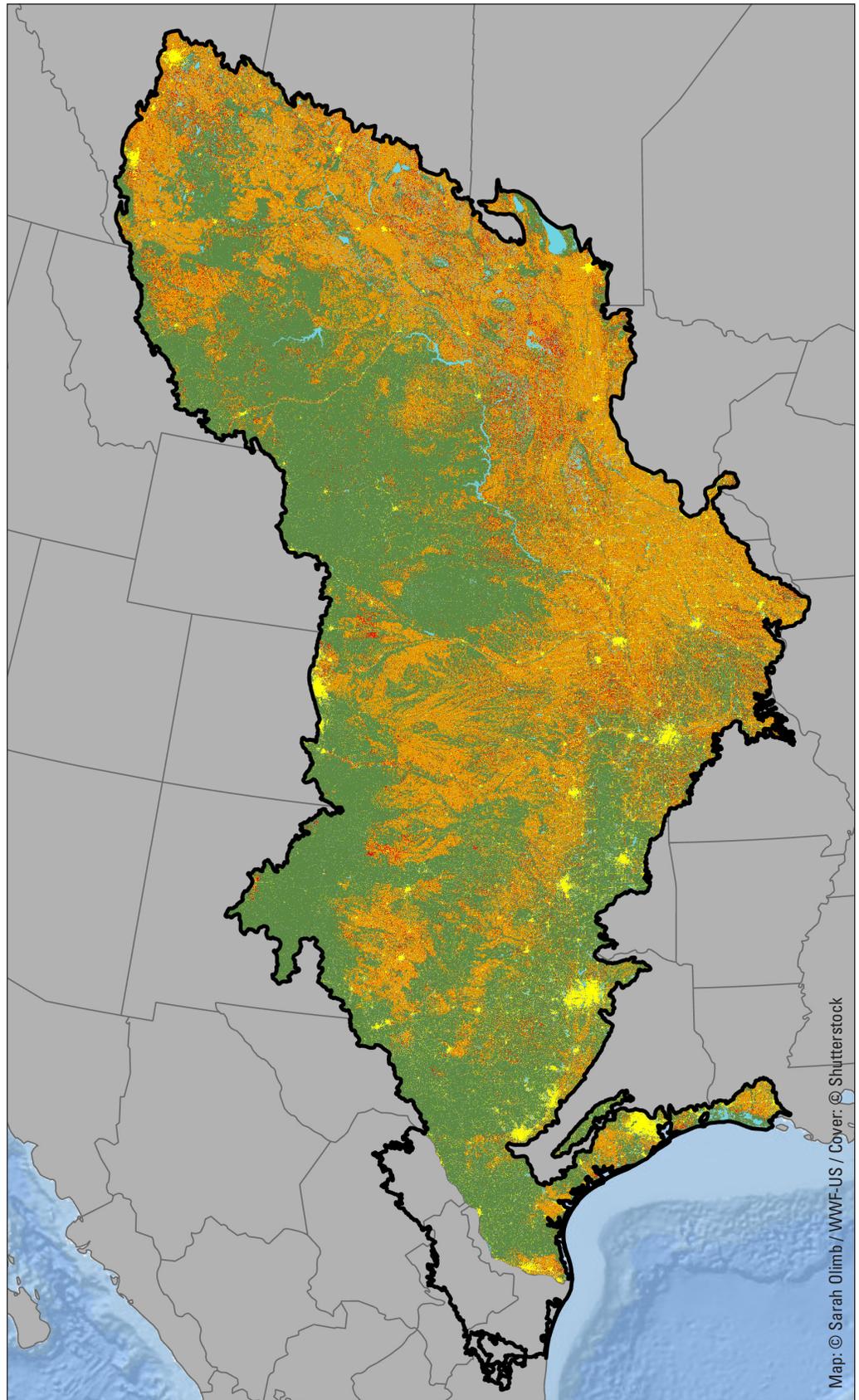
As Congress considers the Farm Bill, increased pro-grasslands policy would shore up resources and develop strategies that can support the livelihoods of producers, incentivize grassland stewardship, and discourage sod busting. In addition to the Farm Bill, the North American Grasslands Conservation Act, if passed, would support the efforts of ranchers who are eager to leave these majestic Great Plains better off through improved grazing management, leading to years of positive outcomes for rural communities and nature.

* Pictured at top: The Greater Prairie-chicken (*Tympanuchus cupido*) is a non-migratory, grassland dependent species.

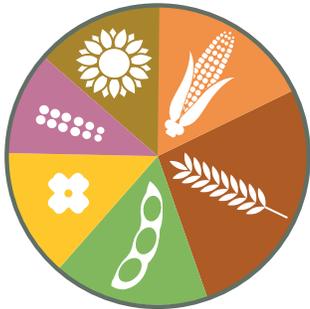


The destruction of the Great Plains is more than just a problem for people living in states like Montana and South Dakota. Whether it's more frequent and intense droughts due to increasing amounts of carbon in the atmosphere when grasslands are plowed, or aquifers that aren't replenished due to lost infiltration and increased run-off from plowed fields, the loss of grasslands is affecting us all. We can no longer ignore the fact that these landscapes, which have sustainably provided for people and wildlife for millennia, are being stripped of their ability to do so. This is especially true for the plants and animals of the Great Plains, many of which are unable to adapt to this rapidly changing environment.

INTACT GRASSLANDS, PLOWPRINT, & NEW PLOWPRINT



MOST COMMON CROPS ON ACRES CONVERTED: 2021



GREAT PLAINS

Wheat 27%; Corn 18%; Soy 17%.



NORTHERN GREAT PLAINS

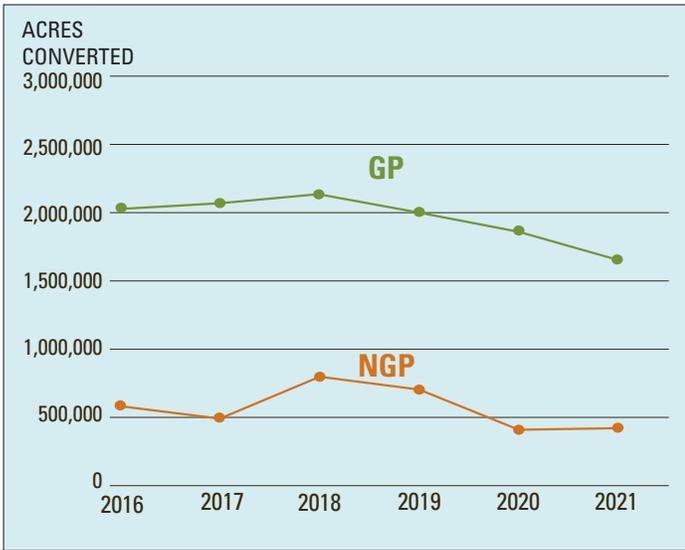
Wheat 40%; Corn 18%; Soy 10%.



¹Other crops and other grains include: millet, sugar beets, safflower, mustard, rye, potatoes, triticale, buckwheat, vetch, camelina, speltz, grapes, turnips, radishes, onions, aquaculture and other fruits, vegetables, herbs, and small grains.

LOWPRINT: BY THE NUMBERS

RATE OF GRASSLAND CONVERSION 2016-2021



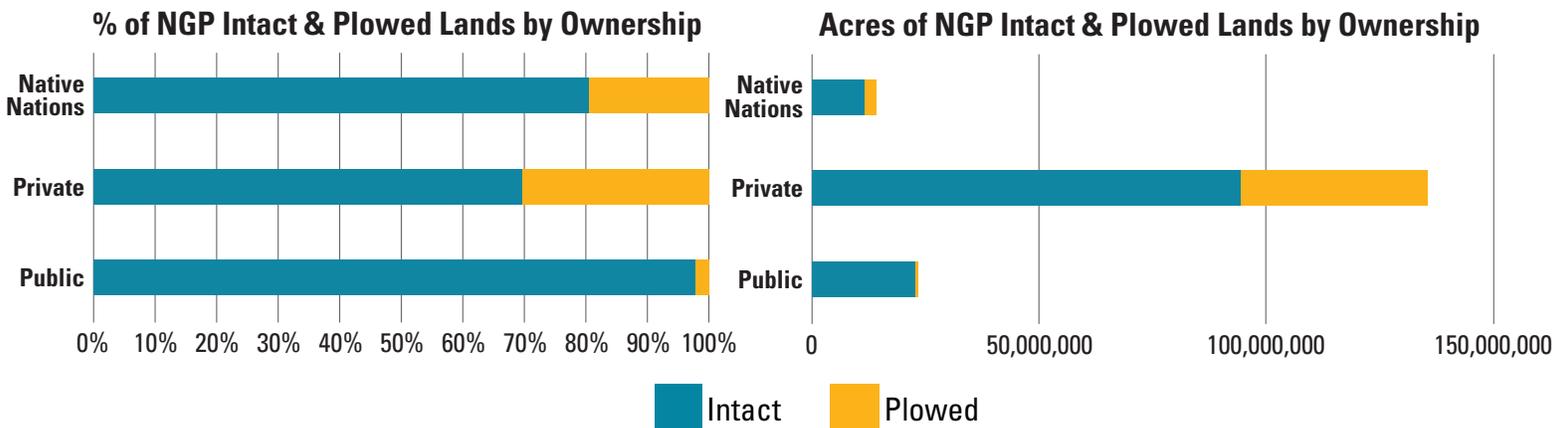
**32 MILLION ACRES
PLOWED
SINCE 2012**
(Nearly 15 times Yellowstone National Park)

TOTAL / ANNUAL PLOWPRINT & INTACT ACREAGE ACROSS THE US & CANADIAN GREAT PLAINS

	TOTAL PLOWPRINT		ANNUAL EXPANSION		INTACT	
	NGP	Great Plains	NGP	Great Plains	NGP	Great Plains
2021	45,144,000	250,263,000	401,000	1,652,000	129,939,000	376,858,000
2020	44,743,000	248,311,000	394,000	1,877,000	130,342,000	378,517,000
2019	44,349,000	245,165,000	685,000	2,006,000	130,735,000	380,393,000
2018	43,664,000	242,019,000	780,000	2,135,000	131,574,000	385,061,000
2017	42,883,000	239,844,000	479,000	2,067,000	132,196,000	387,196,000
2016	42,404,000	237,817,000	565,000	2,032,000	132,675,000	389,263,000

Plowprint Rates from 2021 (the year this report analyzes) compared to prior years in the US and Canada. A cropland expansion of nearly 1.6 million acres occurred across the Great Plains in 2021 alone. Please note that as we strive to improve the accuracy of our analysis, we may make adjustments to figures from previous years as the data underlying the Plowprint improves.

NGP PLOWPRINT & INTACT LANDS BY OWNERSHIP



Across the Northern Great Plains, about 70% of private lands and 97% of public lands (most of which cannot be plowed) remain intact. While oppression of Native Nations has resulted in the reservation system and restricted land ownership, Native Nations have an outsized impact on conservation, with 80% of Tribal lands remaining as intact grasslands.

*This excludes urban development and waterways.

CENTRAL GRASSLANDS ROADMAP: RISK ASSESSMENT MAP

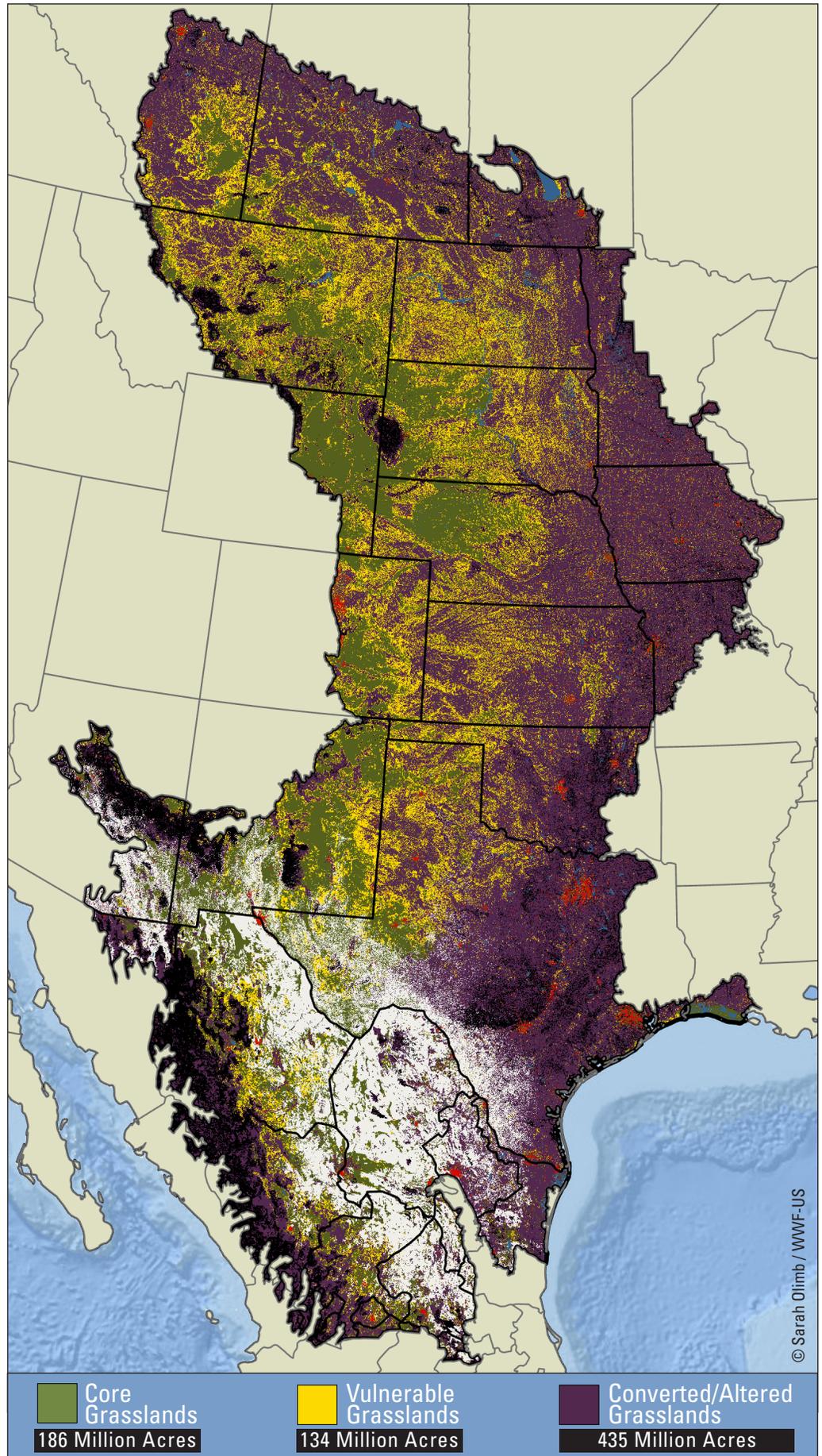
The Central Grasslands Roadmap (CGR) is a continent-wide collaboration to increase conservation of North America's Central Grasslands, which span 700 million acres across Indigenous Lands, Canada, the United States and Mexico.

As an example of the Plowprint Report being put into practice, the CGR's Grasslands Risk Assessment Map provides a biome-level predictor of area in core grassland habitat, area under threat of conversion or encroachment to trees/woody shrubs, and area already converted/encroached.²

CGR Priorities:

1. Keep the green areas of existing grasslands "green-side up" (intact), by:
 - Supporting sustainable range management practices
 - Removing young cedars and invasive shrubs
 - Preventing seed trees from establishing
 - Addressing invasive grasses and forbs
2. Work in yellow areas to to:
 - Voluntarily retain vulnerable grasslands
 - Maintain connectivity with large blocks of existing grassland
 - Address woody species encroachment
 - Remove other annual invasive species
3. Make strategic investments in the purple areas to:
 - Restore cropland on marginal soils back to native grassland
 - Connect large blocks of intact grassland
 - Improve productivity and ecosystem health
 - Remove woody species

² Map (on right) is based on currently available data. Areas at risk of cultivation or converted to plowed land since 2009 are from plowprint.com. Areas at risk of woody encroachment or infested by woody plants are from the Rangeland Analysis Platform (ranglands.app). Black areas signify forest, gray areas signify desert, and red areas represent urban centers.



PROTECTING GRASSLANDS THROUGH POLICY & COLLABORATION

The United States is one of the world's largest and most productive growers of food, which at times puts the nation at odds with its own ambitious goals to conserve nature and halt the loss of biodiversity. Agricultural policy has often resulted in unintended consequences, such as the significant and ongoing plow-up and destruction of the Great Plains. Most of the grasslands with soils best suited for farming were plowed up decades ago. In many cases, the remaining intact grasslands are not as productive for row crop farming. Instead, it is often policy-based incentives rewarding plow-up and creating economic imbalance between ranching and row crop production that drives conversion and not necessarily the need for more space to grow food. In fact, many of the converted acres are used for non-food crops, such as biofuels. Furthermore, each year, between 30-40% of all food in the US is unsold or uneaten.

Although the drivers of grassland conversion are multiple and complex, expert analysis and significant research show that a few play a disproportionate role, including crop insurance premium subsidies and biofuels policies. To address the drivers of conversion, we need to realign our approach to biofuels via the Renewable Fuel Standard (RFS) and subsidization of crop insurance on newly converted grasslands. We also need to bolster programs that invest in keeping grasslands intact and support sustainable grazing. The Farm Bill is among the most significant pieces of legislation for grassland ecosystems, providing the largest source of federal funding for private lands conservation and governing influential food and agriculture programs. It is also a critical opportunity to improve federal nutrition, agriculture, and conservation funding and policies for Native Nations. The next Farm Bill is a critical opportunity for Congress to strengthen and fund key programs that support healthy grasslands.

We recommend that Congress leverage the Farm Bill to:

Protect the Historic Investment in Farm Bill Conservation

Programs Included in the Inflation Reduction Act: The \$20 billion in funding for effective and oversubscribed Farm Bill Conservation programs included in the Inflation Reduction Act is the largest investment into agriculture conservation and rural communities in decades. Congress must protect this funding in the upcoming Farm Bill to meet producer demand for activities that conserve and bolster the land, soil, and water resources that are foundational to the viability of rural economies.

Expand and Strengthen Sodsaver: To better protect native grasslands, Congress should strengthen Sodsaver. This provision was created to reduce incentives to convert native sod to cropland. It should be strengthened by making newly cultivated native sod acreage ineligible for any crop insurance premium subsidies for 10 years, and by expanding Sodsaver's native grassland protections nationwide. In addition, Congress should invest more in tracking conversion to enable analysis of the effects of Sodsaver and other policies on native grasslands and identification of what further action may be needed.

Bolster Grasslands CRP: The Conservation Reserve Program (CRP) is a land conservation program that pays farmers to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Grassland CRP, a subprogram of CRP, helps landowners and operators protect grasslands (including rangeland and pastureland) and certain other lands, while maintaining the areas as grazing lands. Congress should strengthen and expand the Grassland CRP to optimize outcomes for grasslands, ranchers, the climate, and biodiversity by providing an option for longer contracts with managed grazing requirements, targeting core and vulnerable areas as identified in the CGR Risk Assessment Map³, and boosting support for sustainable grazing under CRP in general and Grassland CRP in particular.



³ Visit www.grasslandsroadmap.org for more info.

PROTECTING GRASSLANDS THROUGH POLICY & COLLABORATION (CONT.)

Strengthen Incentives for Sustainable Grazing and Wildlife:

The Environmental Quality Incentives Program (EQIP) provides financial and technical assistance to farmers and ranchers to address natural resource concerns and provide environmental benefits, including benefits to water and air quality, soil conservation, carbon sequestration, biodiversity, and water conservation. The Conservation Stewardship Program (CSP) helps producers maintain and improve conservation systems and adopt additional conservation activities to address priority resource concerns. Congress should scale regenerative and resilient practices and systems by expanding funding under the EQIP and CSP for priority species and by prioritizing sustainable grazing under the 50 percent of EQIP funding set aside for livestock operations.

Strengthen Conservation Technical Assistance (CTA):

CTA is critical to providing producers with the knowledge and tools they need to conserve, maintain, and restore the lands they manage. CTA also helps ranchers improve the health of their grass-based operations and supports effective management and long-term health of highly productive farmlands, which is a vital part of reducing pressures to convert grasslands. Congress should expand technical assistance capacity via NRCS and via partnership agreements.

Increase Equity and Access, including for Native Nations:

Congress should enhance equity and inclusion by ensuring USDA consults with, empowers, and improves program access for historically underserved communities, such as Native Nations, that have faced historical and systematic marginalization and discrimination. Native Nations play a critical role in grassland conservation and management, so ensuring equitable access to USDA programs will enhance outcomes for grasslands.

Reduce food loss and waste: The US produces and imports an abundance of food each year, but approximately 35 percent of it goes unsold or uneaten. Reducing loss and waste represents an important opportunity to mitigate pressures to convert grasslands by reducing how much food needs to be produced overall. The Farm Bill can support food loss and waste reduction programs by states, localities, Native Nations, and schools; improve food date labeling; and advance guidelines to divert unused food as animal feed.

Retain Prime Farmland: Loss of prime farmland to nonagricultural uses exacerbates the pressure to find lands for production elsewhere, including by converting marginal and sensitive lands like grasslands. This makes it crucial to invest in programs such as the Agricultural Conservation Easement Program (ACEP) to keep prime farmland in farming—an important part of the solution to conserving and protecting grasslands.

In addition to the Farm Bill, other key policy opportunities to conserve and protect grasslands include:

Pass the North American Grasslands Conservation Act:

Originally introduced in July 2022, the North American Grasslands Conservation Act would provide much needed resources for voluntary, incentive-based conservation of grasslands and establish a strategy for the protection, restoration, and management of grassland ecosystems across North America. Modeled after the successful North American Wetlands Conservation Act, the Grasslands Act would provide voluntary technical and financial assistance to conserve our remaining grasslands, while contributing to climate resilience, rural livelihoods, and wildlife abundance. Visit www.actforgrasslands.org to learn more.

Amend the Renewable Fuels Standard: Given the impacts of the RFS on land use and conversion to date, the US Environmental Protection Agency (EPA) should require validation that lands were in cultivation prior to 2007 to qualify for the program. Furthermore, EPA should adjust renewable volume obligations downward, to reflect the amount that can be produced from lands in compliance with the no-conversion requirement.

