



Saving Our Grasslands

Why They Matter, Why We Are Losing Them,
and How We Can Save Them

2023

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I. Introduction: Why Grasslands Matter

Grasslands are a critically imperiled terrestrial ecosystem globally,¹ and North America is home to some of the last remaining intact temperate grassland ecosystems. The Central Grasslands, which span 700 million acres across Indigenous lands, Canada, the United States, and Mexico, are vital to our agricultural economy, communities, and landscape resilience. Grasslands are critical for biodiversity, nature, and carbon storage, holding approximately one-third of global terrestrial carbon stocks.² Grasslands provide critical resilience in the face of climate change, including in the American West as it faces increasing drought, heat, and wildfire. Grasslands use less water, reduce soil erosion, and keep carbon in the ground over time. The mosaic of hundreds of grass, wildflower, and sedge species characteristic of grasslands create a patchwork of habitats that support a diversity of insects and pollinators, dozens of songbird species, and myriad mammals. Healthy grasslands have been shown to improve water quality and increase water quantity and storage for downstream communities and water users in the Missouri River Basin, reduce downstream flooding events by regulating runoff, and ensure high-quality water supplies for future generations.

Grasslands are some of the most threatened and least protected ecosystems in the world, with only a few large, intact grasslands remaining.³ More than 70 percent of America's tallgrass, mixed grass, and shortgrass prairies have been destroyed, and about 1.2 million acres of sagebrush burn each year due to invasive annual grasses that fuel catastrophic wildfire. While the remaining fragments of our once vast prairies still have abundant wildlife, they are quickly fading, along with their many ecological benefits. WWF's recent [Plowprint Report](#) documented a loss of 1.8 million acres of grassland habitat in the Great Plains in 2020 and 10 million acres from 2016 to 2020—acres plowed primarily for row crop agriculture. This large-scale habitat loss is a major contributor to the precipitous decline of wildlife species throughout the Central Grasslands, including [grassland birds](#), North America's fastest-declining group of birds, with populations of chestnut-colored longspur, lark bunting, thick-billed longspur, and Sprague's pipit declining by as much as 80 percent since the 1960s. Restoring degraded or plowed grasslands—notably, their biodiversity, carbon storage, and resilience to extreme weather and climate change—takes a long time, often decades or more.⁴ This is an important reality that we simply must face.

1 Rheinhardt Scholtz and Dirac Twidwell, "The Last Continuous Grasslands on Earth: Identification and Conservation Importance," *Conservation Science and Practice* (January 20, 2022), <https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.626>.

2 Bai Yongfei and M. Francesca Cotrufo, "Grassland Soil Carbon Sequestration: Current Understanding, Challenges, and Solutions," *Science* 377, no. 6606 (August 4, 2022): 603–608, <https://www.science.org/doi/10.1126/science.abo2380>.

3 Scholtz and Twidwell, "The Last Continuous Grasslands on Earth."

4 Elise Buisson et al., "Ancient Grasslands Guide Ambitious Goals in Grassland Restoration," *Science* 377, no. 6606 (August 4, 2022): 594–98, <https://www.science.org/doi/10.1126/science.abo4605>.

Grasslands are also essential to the livelihoods and food security of communities around the world. [The Food and Agriculture Organization \(FAO\) estimates](#) that in arid areas, over 100 million people depend on grazing livestock systems as the only possible source of livelihood. In addition, grasslands are a source of goods and services such as wild food, energy, and wildlife habitat. The ongoing restoration of bison to the Northern Great Plains offers a critical example of grasslands' role in food security and food sovereignty. Once numbering in the tens of millions, bison long played a critical role in the lives of Indigenous plains peoples, who relied on these animals for their meat, hide, and fur, and many cultures revered bison as sacred. The decimation of bison herds left Native American communities without their primary food source, negatively impacting their health and culture while degrading the ecosystem. Efforts to restore bison to Native nations lands throughout the Northern Great Plains reflect the desire to promote a healthier ecosystem and restore the important ecological, economic, and cultural benefits these animals provide to Indigenous communities.

We must act now to maintain grasslands for wildlife habitat, sustainable livestock management, carbon sequestration, and for the benefit of future generations, while supporting Native nations, ranchers, farmers, sportsmen and -women, and rural communities. The

urgent climate and biodiversity crises require immediate action on this front.⁵ To succeed, we need to curb the policies presently driving conversion—including the nation's main biofuels program and crop insurance subsidies—and we must advance policies that incentivize grassland protection and restoration. Opportunities to increase protections and support for grasslands include passing the 2023 Farm Bill with improvements to the Grassland Conservation Reserve Program (CRP), the Environmental Quality Incentives Program (EQIP), the Conservation Stewardship Program (CSP), and Conservation Technical Assistance (CTA); leveraging Inflation Reduction Act (IRA) resources provided to the Natural Resources Conservation Service (NRCS) for a new Central Grasslands initiative; increasing investments in programs to reduce food loss and waste and in the protection of prime farmland to reduce the pressure to convert grasslands; and passing the North American Grasslands Conservation Act.

5 IPCC, "Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments", 2018, <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>; PBES (2019): [Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#), E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany, <https://doi.org/10.5281/zenodo.3831673>.



II. Addressing the Primary Policy Drivers of Conversion

The United States is one of the world's largest and most productive producers of food. In 2021, the US rejoined the Paris Agreement and set a [Nationally Determined Contribution](#) to reduce net greenhouse gas emissions (GHG) by 50–52 percent in 2030. The US also has ambitious goals for ensuring we conserve nature and halt biodiversity loss; the State Department in 2022 asserted the nation's commitment [to halting and reversing the loss of biodiversity globally](#). The United States has committed significant financial investment toward the first national conservation goal of conserving at least 30 percent of US lands and waters by 2030, including the [America the Beautiful Challenge](#)—a \$1 billion public-private partnership. At COP27, the Biden-Harris administration released [a nature-based solutions roadmap](#) outlining strategic recommendations to enable the US to unlock the full potential of nature-based solutions to address climate change, nature loss, and inequity.

Some of our policies are at odds with these climate and nature goals, however, resulting in unintended consequences, such as the significant and ongoing conversion of the Central Grasslands. To address the key 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.

Although the drivers of grassland conversion are multiple and complex, expert analysis and significant research elevate a few to top priority, including crop insurance premium subsidies and biofuels policies.⁶ The primary crops grown in the Central Grasslands are [corn, soybeans, and wheat](#).⁷ Animal feed and biofuels account for the vast majority of both corn and soybean use.⁸ Great Plains wheat is used for bread flour, specialty breads, and blending with lower-protein wheat.⁹

6 See, for example, *Biofuels and the Environment: Second Triennial Report to Congress* (US Environmental Protection Agency, Washington, DC, 2018); Christopher K. Wright et al., "Recent Grassland Losses Are Concentrated around U.S. Ethanol Refineries," *Environmental Research Letters* 12, no. 044001 (2017), <https://iopscience.iop.org/article/10.1088/1748-9326/aa6446>; and Tyler K. Lark et al., "Environmental Outcomes of the US Renewable Fuel Standard," PNAS 119, no. 9 (February 14, 2022), among many others.

7 WWF, *2022 Plowprint Report*, 2022.

8 USDA Economic Research Service, "Feed Grains Sector at a Glance," <https://www.ers.usda.gov/topics/crops/corn-and-other-feed-grains/feed-grains-sector-at-a-glance/>.

9 USDA Economic Research Service, "Wheat Sector at a Glance," <https://www.ers.usda.gov/topics/crops/wheat/wheat-sector-at-a-glance/>.

A. The Renewable Fuel Standard

Congress created the [Renewable Fuel Standard](#) with the goal of moving the United States toward greater energy independence and security and increasing the production of clean, renewable fuels. Authorized under the Energy Policy Act of 2005 and expanded under the Energy Independence and Security Act of 2007 (EISA), the RFS was intended to shift the nation away from dependence on fossil fuels and to reduce overall greenhouse gas emissions while avoiding negative impacts on climate and nature. While its goals are laudable, considerable evidence indicates that the RFS may result in [little to no GHG emissions benefit](#), in large part because of the land conversion resulting from the increased demand the program created for biofuels commodities such as corn and soy. In addition to producing significant carbon emissions, land use change is the largest driver of nature and biodiversity loss.

The reason the RFS has been such a driver of grassland conversion is the adoption by the US Environmental Protection Agency (EPA) of a mass balance approach to enforcing the EISA requirement regarding lands cultivated after 2007. To prevent the plowing of grasslands, the EISA states that no crop-based biomass from lands cultivated after 2007 could qualify as renewable biomass. In the final RFS rule, however, EPA adopted an approach called “aggregate compliance,” setting 402 million acres as a national baseline for eligible cropland in 2007. If cropland stayed at or below the 402-million-acre baseline, EPA would not require biofuel facilities to report where the feedstock was grown.^{10,11}

This methodology masks the conversion of grasslands and, given the steady state of overall agricultural lands at 402 million acres or below, has resulted in EPA not tracking the conversion of lands for biofuels production. Although the total aggregate amount of cropland may have remained at or below 2007 levels,

10 75 Fed. Reg. at 14,701, <https://www.federalregister.gov/documents/2010/03/26/2010-3851/regulation-of-fuels-and-fuel-additives-changes-to-renewable-fuel-standard-program>.

11 75 Fed. Reg. at 14,703, <https://www.federalregister.gov/documents/2010/03/26/2010-3851/regulation-of-fuels-and-fuel-additives-changes-to-renewable-fuel-standard-program>.

this approach has failed to prevent the conversion of land that was not in cultivation as of December 2007. Since 2007, in fact, millions of acres of agricultural land were taken out of production for urban or suburban development,¹² allowing for the cultivation of an equal amount of native grasslands or wetlands without exceeding the regulatory cap. The result has been a significant increase in the amount of land that was uncultivated in 2007 yet has since been converted to cropland, causing increased greenhouse gas emissions, excessive water pollution, destruction of wildlife habitat, and soil and land erosion.

The pace of conversion has been documented extensively. [Research shows](#) a direct connection between proximity to an ethanol refinery and conversion of grasslands to cropland. Assessment of the initial implementation of the Renewable Fuel Standard v2 (RFS2) from 2008 to 2012 found nearly 4.2 million acres of arable non-cropland converted to crops within 100 miles of refinery locations, including 3.6 million acres of converted grasslands.¹³ In its first two triennial reports on this issue, EPA concluded that since the passage of EISA, actively managed cropland has increased by roughly 4 million to 7.8 million acres, and that production of biofuels—corn for ethanol and soy for biodiesel—is responsible for much of this land conversion.¹⁴

The [impacts of land use change](#) driven by the RFS are significant, including the loss of substantial stored carbon, increased soil erosion, and increased nitrogen loss.¹⁵ **Congress’s General Accountability Office found in 2019 that the RFS provided little to no GHG emissions benefit. More recent research concluded that the RFS resulted in increased crop prices and led to a net increase in GHG emissions as total cropland expanded by 5.2 million acres.**

12 A. Ann Sorensen et al., *Farms under Threat: The State of America’s Farmland*, and Julia Freedgood et al., *Farms under Threat: The State of the States* (Washington, DC: American Farmland Trust, 2020).

13 Christopher K. Wright et al., “Recent Grassland Losses Are Concentrated around U.S. Ethanol Refineries,” *Environmental Research Letters* 12, no. 044001, <https://iopscience.iop.org/article/10.1088/1748-9326/aa6446>.

14 EPA, *Biofuels and the Environment: Second Triennial Report*, 44.

15 Xuesong Zhang et al., “Grassland-to-Cropland Conversion Increased Soil, Nutrient, and Carbon Losses in the US Midwest between 2008 and 2016,” *Environmental Research Letters* 16, no. 054018 (2021), <https://iopscience.iop.org/article/10.1088/1748-9326/abcbe>.

B. Crop insurance subsidies

Given the significant risk involved in farming, including weather, pests, disease, and natural disasters, policies and programs like crop insurance that can reduce risk are very popular in the farming community. As a result, crop insurance—an instrument that reduces risk or shifts risk away from farmers—is very influential in decision-making, as documented by a wide range of expert research and analysis. Subsidization of crop insurance has been shown to affect crop choice and production practices and lead to conversion of highly erodible lands from pasture and grazing to crop production.¹⁶ The United States Department of Agriculture (USDA) partners with private insurance companies, which sell and service insurance policies for farmers. The costs of the program paid by the federal government include (1) subsidies to pay for part of a farmer's crop insurance premium (over 60 percent in recent years) and (2) compensation to the insurance companies for selling and servicing crop insurance policies.¹⁷

As with biofuels policy, copious research documents the impacts of access to crop insurance premium subsidies on marginal lands, including increased conversion of pasture and rangeland to cropland over the past 20 years in the Northern Plains states.¹⁸ Greater crop insurance participation has also been shown to have contributed to a reduction in acres offered under the Conservation Reserve Program from 1986 to 2011.¹⁹

16 Vincent H. Smith, Joseph W. Glauber, and Barry K. Goodwin, "Time to Reform the US Federal Agricultural Insurance Program" (American Enterprise Institute, October 2017), <https://www.aei.org/wp-content/uploads/2017/10/Time-to-Reform-the-US-Federal-Agricultural-Insurance-Program.pdf?x91208>.

17 According to USDA, federal crop insurance supported about 1.2 million policies in 2022, covering 493 million acres. The total cost of the program from 2011 to 2021 was about \$90 billion. Congressional Budget Office, "Reduce Subsidies in the Crop Insurance Program," December 9, 2020, <https://www.cbo.gov/budget-options/56815>.

18 Roger Claassen et al., *Grassland to Cropland Conversion in the Northern Plains: The Role of Crop Insurance, Commodity, and Disaster Programs* (USDA Economic Research Service, June 2011); Roger Claassen, Joseph C. Cooper, and Fernando Carriazo, "Crop Insurance, Disaster Payments, and Land Use Change: The Effect of Sodsaver on Incentives for Grassland Conversion," *Journal of Agricultural and Applied Economics* 43, no. 2 (May 2011): 195–211, <https://naldc.nal.usda.gov/download/49836/PDF>.

19 Ruiqing Miao, David A. Hennessy, and Hongli Fen, "Sodbusting, Crop Insurance, and Sunk Conversion Costs," *Land Economics* (2014): 601–22, <https://doi.org/10.3368/le.90.4.601>.

CROP INSURANCE SIDEBOX

A Government Accountability Office (GAO) study from 2015 provides a useful view into crop insurance subsidy payments, including the following highlights:

- The highest-income participants in the crop insurance program were associated with larger farms compared with other participants. Premiums, and hence premium subsidies, are based on the value of the insured crops and would be greater if more acres were insured and crop values were higher. In some cases, the highest-income participants insured considerably more acres and received considerably more than the average amount of premium subsidies.
- On average, the highest-income participants were associated with policies insuring about 2,920 acres, while other participants were associated with policies insuring about 1,330 acres.
- The highest-income participants were provided with greater premium subsidies than other participants. Specifically, each of the highest-income participants received an average of about \$8,500 in premium subsidies each year, while other participants received an average of about \$7,480.
- From 2009 to 2013, the participants with the 10 highest dollar amounts in premium subsidies each insured an average of about 39,000 acres, received an average of about \$2.6 million in premium subsidies, and collected about \$2.5 million in claims payments during the five-year period.¹

1 GAO, "Crop Insurance: Reducing Subsidies for Highest Income Participants Could Save Federal Dollars with Minimal Effect on the Program," March 18, 2015, <https://www.gao.gov/products/gao-15-356>.

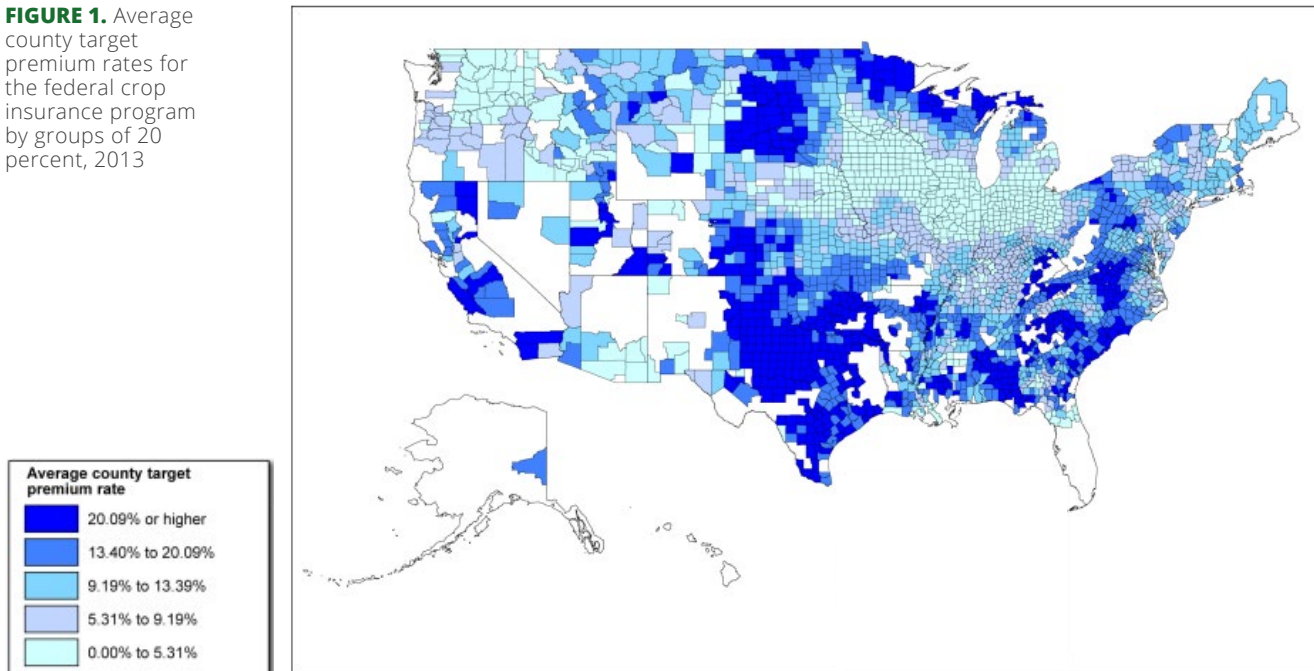
Farming high-risk land brings increased risk of low yield, crop failure, or inability to plant. Data documents that the rate of crop failure or low yield is higher on marginal and high-risk lands and that crop insurance payouts are more frequent and larger. A 2015 [study by the GAO](#)²⁰ showed that the federal government’s crop insurance costs are “substantially higher in areas with higher crop production risks (e.g., drought risk) than in other areas.” In fact, in higher-risk areas, the government’s costs (i.e., crop value in dollars) were more than 2.5 times the costs of other low- or non-risk areas.

A key visual from the GAO report (**FIGURE 1**) shows average county target premium rates, with the darker areas representing counties with higher average rates. **FIGURE 2** shows the riskiest 20 percent of counties (a total of 510) in terms of average county target premium rates. The Great Plains, which has areas with relatively high drought risk, had a large portion of the higher-risk counties’ premium dollars. **FIGURE 3** shows the substantially higher costs in higher-risk counties.²¹

20 GAO, *Crop Insurance: In Areas with Higher Crop Production Risks, Costs Are Greater, and Premiums May Not Cover Expected Losses* (GAO-15-215, February 9, 2015), <https://www.gao.gov/assets/gao-15-215.pdf>.

21 GAO, *Crop Insurance*.

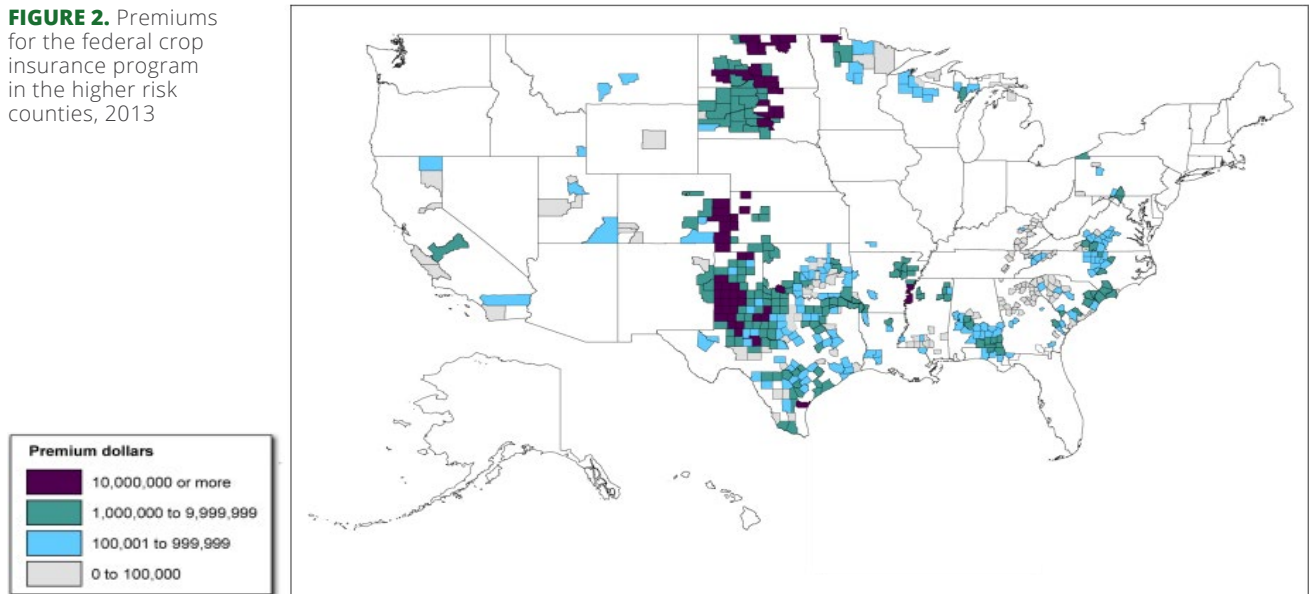
► **FIGURE 1.** Average county target premium rates for the federal crop insurance program by groups of 20 percent, 2013



Sources: GAO analysis of USDA’s Risk Management Agency crop insurance data; MapInfo (map). | GAO-15-215

Note: To identify areas with higher crop production risks, we determined the average of each county’s 2013 county target premium rates for the five major crops—corn, soybeans, wheat, cotton, and grain sorghum. These averages were weighted by crop, crop type, and practice based on county premium dollars. The white areas on the map represent counties that did not have target rates for any of these crops.

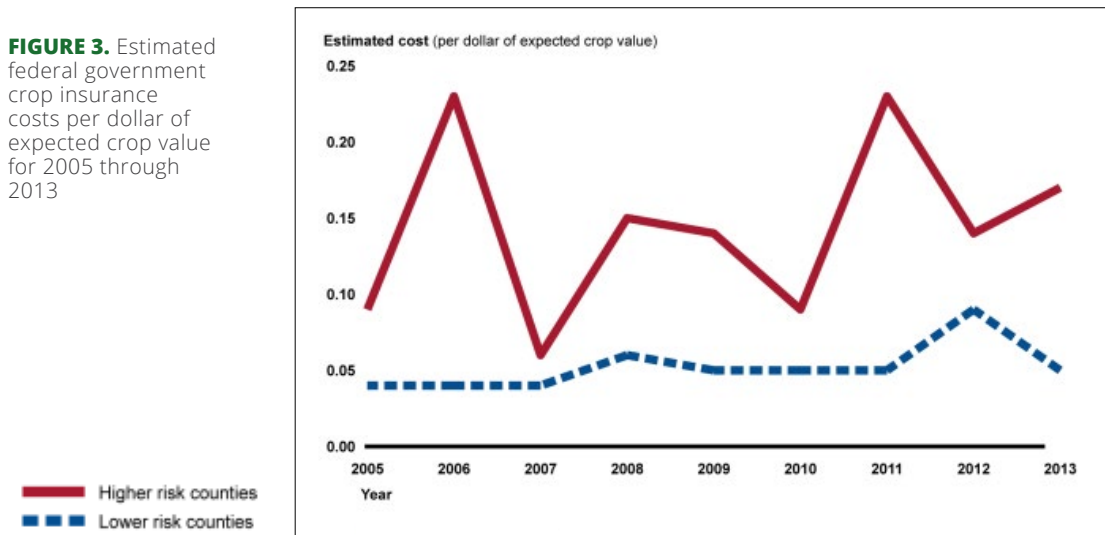
► **FIGURE 2.** Premiums for the federal crop insurance program in the higher risk counties, 2013



Sources: GAO analysis of USDA's Risk Management Agency crop insurance data; MapInfo (map). | GAO-15-215

Note: To identify areas with higher crop production risks, we determined the average of each county's 2013 county target premium rates for the five major crops—corn, soybeans, wheat, cotton, and grain sorghum. These averages were weighted by crop, crop type, and practice based on county premium dollars. The map shows the 20 percent of U.S. counties—510 counties—that had the highest average target premium rates.

► **FIGURE 3.** Estimated federal government crop insurance costs per dollar of expected crop value for 2005 through 2013



Source: GAO analysis of USDA's Risk Management Agency crop insurance data. | GAO-15-215

Note: These estimated government costs are based on our analysis of Risk Management Agency data on loss claim payments to farmers, premium subsidies provided on behalf of farmers, premiums paid by farmers, administrative and operating expense subsidies paid to insurance companies, and underwriting gains paid to insurance companies. The crop data used for these estimates are corn, cotton, grain sorghum, soybeans, and wheat. Higher risk counties are those 510 U.S. counties with the highest average county target premium rates in 2013, and lower risk counties are the other 2,044 counties.

C. Changing the trajectory of grasslands loss

The preceding analysis of the drivers of grassland conversion clarify several vital steps to reverse the current trajectory of grasslands loss, by (1) amending the RFS and (2) rethinking policy regarding crop insurance subsidies. Our recommendations are as follows.

1. ADDRESS THE CONVERSION CREATED BY THE RFS

First, given the impacts of the RFS on land use and conversion to date, EPA should end use of the aggregate compliance approach to qualify for the program and instead require validation that lands were in cultivation prior to 2007. This policy change would significantly alleviate the pressure from the RFS to convert grasslands to cropland for the biofuels market.

Second, EPA should reassess its [recent proposal](#) to increase the required RFS volumes and percentage standards. Instead, EPA should adjust renewable volume obligations for total renewable fuel to reflect the amount that can be produced from EISA-compliant land, meaning those volumes should be adjusted downward considerably.

Finally, EPA should follow the lead of the US-supported sustainability requirements under the United Nations' International Civil Aviation Organization (ICAO), which requires third-party certification of alternative aviation fuel against a set of sustainability safeguards designed to prevent land use conversion, water and soil degradation, and other relevant risks. Similarly, under the European Union's Renewable Energy Directive (RED II), more than a dozen entities are qualified to certify whether biofuels under the program comply with EU sustainability criteria. Adoption of the third-party

certification approach under the RFS would allow EPA to independently validate that biofuel credited under the program complies with restrictions on land conversion, and thus EPA could safeguard the program against unwanted consequences for the climate, wildlife, natural resources, and surrounding communities.

In addition to these changes, Congress should revise underlying requirements to direct EPA to ensure that all feedstocks under the RFS deliver at least 50 percent life-cycle GHG emissions reduction over a 10-year time frame compared with the equivalent use of fossil fuels. This requirement would be based on rigorous and transparent accounting that includes emissions from combustion, production, transportation, and processing of biomass; from direct and indirect land use change arising from the production of biomass; and from changes in above- and belowground carbon stocks. Enacting a 50 percent threshold would align the RFS program with requirements under other US programs and incentives, including the Clean Fuel Production Tax Credit, the Sustainable Aviation Fuel Tax Credit, and the Sustainable Aviation Fuel Grand Challenge.

To address the significant land use conversion caused by the RFS and to build in additional sustainability measures, EPA should take the following steps to replace the aggregate compliance approach with a more effective solution:

- Require biofuels producers to qualify for a Renewable Identification Number ([RIN](#)), by proving that each source of crop-based renewable biomass used to meet the RFS was grown on EISA-compliant lands. Ample mechanisms are available for renewable fuel producers to verify that their feedstocks were in production prior to 2007, including readily accessible documentation such as receipts for agricultural products; purchasing records; documentation of participation in an agricultural program sponsored by a federal, state, or local government

agency; documentation of land management in accordance with an agricultural certification program; and lease information. More advanced technologies, such as satellite and aerial imagery along with mapping tools, also can verify the timeline of feedstocks production.

- Require proof that production of renewable biomass does not cause land conversion for production of displaced crops, which would clearly violate the structure and intent of EISA.²²
- Increase its investment in data and tracking to fully support and enable the assessment and reporting called for in the EISA, including by expanding and accelerating EPA's work with USDA, the US Department of Energy (DOE), and the United States Geological Survey (USGS) to catalyze additional investment in data collection, management, and analysis. EPA, USDA, DOE, and USGS already collaborate to collect and analyze important data on the impact of biofuels on climate and the environment, including collecting the data and conducting the analysis for the [triennial reports](#) to Congress as required under the EISA. These reports, along with other nongovernmental research, have been instrumental to understanding and documenting the impacts of the RFS on land conversion, water quality, wildlife, and more. Further expanding this cross-agency data collection, research, and analysis is critical to implementing the changes to RFS necessary to align the program with the environmental goals of EPA and the rest of the US government on the topic of climate and nature.

With these improvements, the RFS can better align with its own objectives, prevent most biofuel-driven land conversion, and improve the environmental outcomes of the program overall.

22 To track indirect land use change, EPA could use the GTAP model, selected by the California Air Resources Board for iLUC analysis for the state's Low Carbon Fuel Standard. The GTAP—a CGE model developed and supported by researchers at Purdue University—has a global scope, is publicly available, and has a long history of use in modeling complex international economic effects. See https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/iluc_assessment/iluc_analysis.pdf.

2. CURB THE CROP INSURANCE SUBSIDIES THAT FUEL GRASSLAND CONVERSION

Efforts have been made to address the impacts of crop insurance in driving grassland conversion. Sodsaver is a provision created to protect native prairies by reducing federal premium subsidies for crop insurance on land where native sod has been plowed for row crop planting. Currently, the provision applies in six states—Iowa, Minnesota, Montana, Nebraska, North Dakota, and South Dakota—reducing crop insurance premium subsidies by 50 percent for four years. The federal government pays an average of 60 percent of total crop insurance premiums, while farmers pay about 40 percent; Sodsaver reduces the government subsidies to approximately 30 percent where native sod is converted to cropland.²³

Yet the program's present reduction of crop insurance subsidies by 50 percent (a reduction from approximately 60 percent to 30) percent provides insufficient disincentive to avoid farming marginal and high-risk lands like converted grasslands.²⁴ To provide a stronger disincentive, Sodsaver must be strengthened beyond its current form. In order to provide more meaningful protection for grasslands, **Congress should leverage the 2023 Farm Bill to expand and strengthen the Sodsaver provision.** To achieve this objective, Congress should (1) make any native sod acreage converted after February 7, 2014, ineligible for any crop insurance premium subsidies for 10 years and (2) expand Sodsaver native grassland protections nationwide.

In addition to improving the Sodsaver program, we need to invest more in tracking grassland conversion. **Congress should require USDA to report intact grasslands conversion data to Congress and the public annually via a data infrastructure or public/private data warehouse that tracks land conversion and soil carbon loss.** With the ability to properly analyze the effects of Sodsaver and other policies on intact grassland, we can identify what further action may be needed, including additional investment to improve conversion tracking.

23 Congressional Budget Office, "[Reduce Subsidies in the Crop Insurance Program.](#)"

24 Claassen et al., *Grassland to Cropland Conversion in the Northern Plains*.



III. Policies to Save Grasslands: Investing in Conservation, Protection, and Restoration

Investing in solutions that reward and incentivize the conservation, protection, and restoration of grasslands and grass-based agriculture will reduce the conversion pressure that presently threatens our grasslands. To this end, we offer the following policy recommendations.

A. Leverage the 2023 Farm Bill conservation programs

The 2023 Farm Bill presents a unique opportunity to incentivize grasslands conservation and restoration and to provide support for sustainable grazing, as described in WWF's complete list of [2023 Farm Bill recommendations](#).

The Farm Bill is among the most significant federal policies to provide direct support to the US agriculture sector and affect conservation of the nation's soil, land, and water resources. This legislation proposes to become the largest US public investment in private lands conservation and agriculture research and innovation. The Farm Bill provides farmers and ranchers with the tools they need to voluntarily advance local and national sustainability goals. It plays a vital role in the livelihoods of producers and rural communities and is essential to addressing national nutrition, hunger, and food loss and waste objectives. Beyond fixing the role of crop insurance subsidies in fueling grassland conversion, the Farm Bill can provide critical investments to better protect and conserve grasslands via the expansion and strengthening of key conservation programs such as those described below.

1. GRASSLAND CRP: CONSERVING AND RESTORING GRASSLANDS

The **Conservation Reserve Program** is a land conservation program that pays farmers to remove environmentally sensitive land from agricultural production and then to 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. The program emphasizes support for grazing operations, plant and animal biodiversity, and grasslands and land containing shrubs and forbs (flowering plants) under the greatest threat of conversion.

Congress should expand and enhance Grassland CRP to optimize outcomes overall—including for grasslands, ranchers, the climate, and biodiversity—as follows:

- Direct the Farm Service Agency (FSA) to expand Grassland CRP to include an option for 30-year contracts that would extend climate, biodiversity, and water benefits and strengthen protections against conversion. The 30-year contract should require rotational grazing and rest periods under a managed grazing plan with monitoring.
- Direct FSA to establish “core” and “vulnerable” areas of the Central Grasslands as a Central Grassland Priority Zone under the Grassland CRP National Priority Zones. Offers within Grassland CRP National Priority Zones receive an additional 15 ranking points and \$5/acre. In core areas, data shows intact grasslands are critical to maintain and protect, both ecologically and in terms of the viability of grass-based economies. In vulnerable areas, data shows greater risk and thus a need to protect lands from conversion to cropland and/or woody species or invasive encroachment. NRCS supports and contributes to the Central Grasslands Roadmap—which provides the [Assessment Map](#), a useful resource—via its [Framework for Conservation Action in the Great Plains Grasslands biome](#).

- Direct FSA to prioritize sustaining CRP and Grassland CRP lands as grasslands by
 - » providing cost-sharing for the establishment of grazing infrastructure;
 - » ending the practice of requiring CRP contract holders to take a small payment reduction if they include grazing in their CRP conservation plan, provided they have a grazing plan that includes rotational grazing and rest periods;
 - » supporting the transition of expiring CRP and Grassland CRP acres to working grasslands, by providing extended post-contract incentive payments of five to 10 years if the landowner agrees to maintain rotational grazing and rest periods in their management plan on those acres; and
 - » providing support for monitoring of grazing outcomes on CRP and Grassland CRP.

2. EQIP, CSP, AND CTA: SCALING REGENERATIVE AND RESILIENT PRACTICES AND SYSTEMS

The **Environmental Quality Incentives Program** provides financial and technical assistance to farmers and ranchers to address natural resources concerns and provide environmental benefits, including benefits to water and air quality, soil conservation, carbon sequestration, biodiversity, and water conservation. The **Conservation Stewardship Program** helps producers maintain and improve conservation systems and adopt additional conservation activities to address priority resource concerns. CSP focuses on rewarding conservation performance.

Congress should strengthen co-benefit outcomes from EQIP and CSP as follows:

- Direct NRCS to expand the funding pools for priority wildlife initiatives and to prioritize EQIP and CSP wildlife practices and enhancements (including any necessary updates to practice standards) that benefit federally protected, candidate, state-listed, culturally significant, and other priority species identified in existing wildlife conservation plans, such as State Wildlife Action Plans and the North American Waterfowl Management Plan. The protection and

recovery of key grassland species—birds, black-footed ferrets, and other at-risk and culturally significant species—are indicators of the health of the grassland ecosystem that they depend on to survive.

- Direct NRCS to create extended (five-plus years), facilitated secondary application options for threatened and endangered, candidate, and culturally significant species, especially species involved in priority initiatives and in projects that create corridors or otherwise enable wildlife migration through agricultural systems.
- Direct NRCS to prioritize ranking and technical support, within the 50 percent of total EQIP funding set aside for livestock operations at the national level, for the adoption of advanced grazing management in EQIP and CSP, and to create extended contract options (five-plus years) and facilitate re-enrollment to sustain this valuable practice for extended periods. To ensure desired outcomes and support for adaptive management, USDA should provide support for monitoring of grazing outcomes under EQIP and CSP contracts.

Conservation Technical Assistance is critical to providing our nation’s ranchers with the knowledge and tools they need to conserve, maintain, and restore grasslands and other lands they manage. CTA also helps ranchers improve the health of their grass-based operations for the future and keep highly productive farmlands healthy and well managed, which is a vital part of reducing pressures to convert grasslands. To enhance this critical resource, Congress should:

- Direct USDA to explicitly allow a Native nation or group of Native nations within a state or region to develop technical standards for implementation of conservation projects, based on Indigenous traditional ecological knowledge (ITEK).
- Advise USDA to codify current NRCS practices that encourage ITEK-based conservation and to recognize the value of traditional practices in improving conservation project implementation, environmental and habitat conditions, and agricultural outcomes.
- Increase funding significantly for CTA so that NRCS can hire more staff and build capacity to meet the needs of today’s increasingly diverse farming and ranching populations and to address the conservation challenges they face.
- Direct USDA to make substantial updates and improvements to optimize how the agency delivers technical assistance, including by updating staff training; incorporating advances in science, technology, cultural competency, cross-cultural communication, traditional ecological knowledge, and behavioral science; improving agency outreach and communications to diverse and underserved populations such as Native and historically underserved producers; and bolstering resources and staff to increase availability and access to technical service providers for Native nations, such as through dedicated funding for Tribal conservation districts.



3. NATIVE NATIONS AND AGENCIES: SCALING EQUITY AND INCLUSION

While much progress has been made, USDA continues to face a critical gap in effectively reaching and engaging Native nations, whose members also play a vital role in managing grasslands and fostering habitat for critical grassland wildlife such as bison and black-footed ferrets. Congress should seize the opportunity presented by this Farm Bill to ensure USDA consults with, empowers, and improves access to programs for communities that have faced historical and systematic marginalization and discrimination, starting with the following recommendations:

- Apply 638 Authority self-determination contract opportunities to Conservation Title programs, which would enable Tribal governments to directly administer Conservation Title programs to eligible Tribal producers and make program access easier for Native producers.
- Direct USDA to enact special provisions to ensure that any Tribal government-allowed entity, not just individual producers, can access conservation programs and technical assistance on Tribal lands as the recognized conservation program participant.
- Address the significant challenges that Native Nations face in meeting federal match requirements, given the degree to which Tribal funding is federal and so ineligible as a match. In order to increase access to and participation by Tribal interests in EQIP, CSP, the Agricultural Conservation Easement Program (ACEP), Conservation Innovation Grants (CIG), the Regional Conservation Partnership Program (RCP), and CRP programs, Congress should reduce or waive match and cost-share requirements for Native nations in these priority USDA conservation programs.



B. Maximize benefits of Inflation Reduction Act funding

The first step Congress should take to address emissions trends, extreme weather, and biodiversity loss is to protect the \$20 billion investment in agricultural conservation and Conservation Technical Assistance included in the Inflation Reduction Act. [WWF has offered a series of recommendations for NRCS to follow in prioritizing IRA funding](#), guided in part by the Central Grasslands Roadmap.

The unprecedented investment from the IRA in USDA conservation programs provides the best opportunity in decades to meet producer demands for programs and initiatives that enable farmers, ranchers, and forest owners to become more resilient and sustainable, which is essential to their own viability and that of our nation's food systems and ecosystems.

The IRA funds allocated to NRCS provide the agency with an unprecedented opportunity to implement practices and quantify greenhouse gas emission reductions, scale practices and management systems that mitigate and adapt to climate change, enhance the resilience of the agricultural system, and improve measurement and quantification for climate and biodiversity outcomes.

NRCS should ensure the Central Grasslands, a critical landscape that has not received sufficient funding given its need, is a priority for funding under the IRA and within its technical assistance allocation. This applies to EQIP, ACEP, CSP, and RCPP; NRCS must ensure that

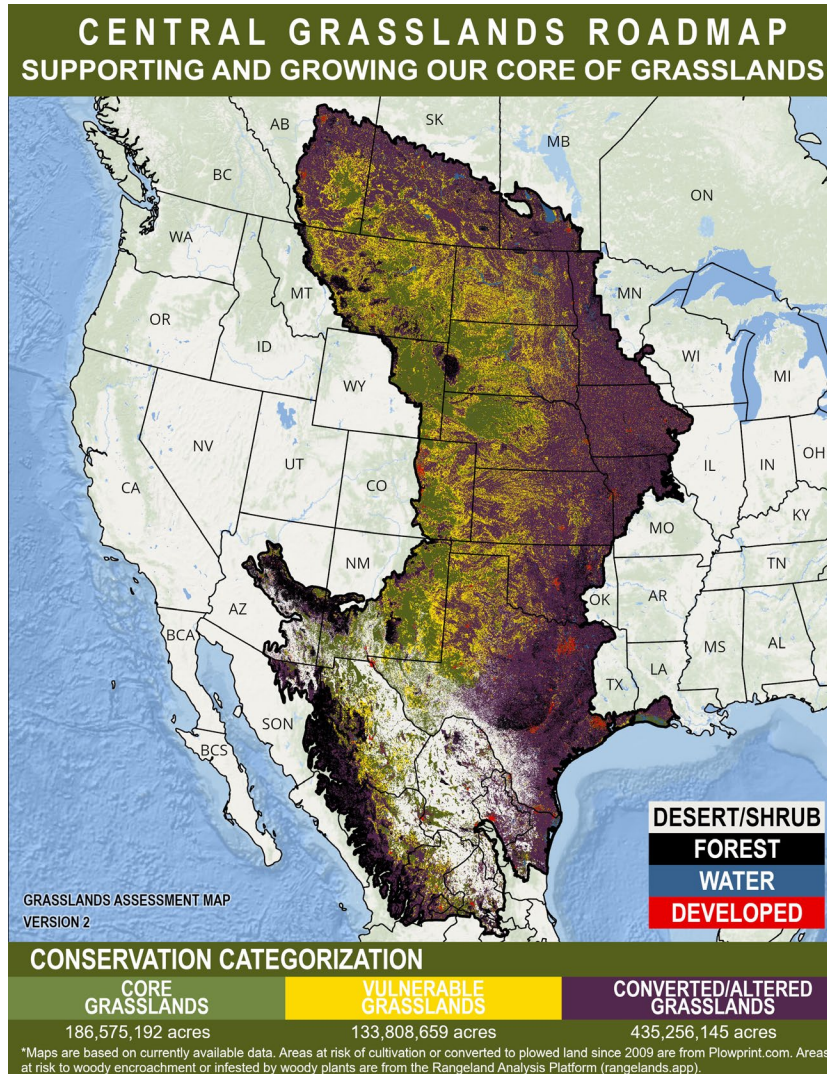
eligible practices for grasslands are included in these programs. Furthermore, NRCS should coordinate and collaborate with FSA to ensure the CRP can also play a much greater role in advancing Central Grasslands conservation objectives.

Furthermore, NRCS should launch a new, strategic initiative to protect, restore, and improve management of grasslands in the Central Grasslands, building on the extensive work of the [Central Grasslands Roadmap](#). The recently released Central Grasslands Roadmap [Assessment Map](#) (see **FIGURE 4** below) should be used to guide voluntary conservation investments, with an emphasis on maintaining and growing core grassland areas. This initiative should receive dedicated funding from EQIP and CSP, as well as acres from Grassland CRP, for the following purposes:

- Develop an educational campaign focused on grasslands conservation and sustainable ranching in the region, to increase awareness about the importance of healthy grasslands; develop opportunities and systems to share scientific understanding, success stories, best practices, trainings, and learning across the Central Grasslands; and catalog and celebrate current ranchers' and producers' efforts.
- Provide new options under Grassland CRP, including longer contracts, enhanced prioritization of vulnerable and core areas, and increased support for rotational grazing plans.



► **FIGURE 4.** Central Grasslands Assessment Map



- Create an expanded, sustained black-footed ferret initiative across the Central Grasslands, building on the [existing work in Colorado](#), with coordinated and consistent eligibility and enrollment goals across the region. The initiative should provide technical and financial assistance for willing landowners to maintain ranch land in prairie habitats and the livestock operations and/or bison pastures that they support, while also supporting the conservation and recovery of several wildlife species associated with prairie dogs. This effort should include representatives of Native nations, which have a crucial role to play in black-footed ferret recovery.
- Prioritize improved grazing management within EQIP, including a component focused on bison management (such as technical and ITEK adaptations, as needed), and enhance the program’s incentives for woody invasives removal by enabling ranchers to seek assistance for woody encroachment at 10 percent coverage in all Central Grasslands states.
- Provide dedicated outreach, education, and technical assistance across the initiative for both Native and non-Native ranchers, including development of a liaison between the Bureau of Indian Affairs (BIA) and USDA, to ensure effective engagement and participation of Native nations.

C. Reduce food loss and waste

The loss and waste of food products can greatly increase conversion pressure on our nation's grasslands. The United States produces and imports an abundance of agricultural products and food each year, but approximately 35 percent of it [goes unsold or uneaten](#).²⁵ This loss and waste of food carries enormous economic, environmental, and social costs, including increasing pressure to convert lands for food production. Reducing food loss and waste represents a great opportunity to reduce the pressure to convert grassland and other habitats for crop production and to deliver many other social, economic, and environmental benefits. In 2015, both USDA and EPA committed to cutting food waste in the United States by [50 percent by 2030](#). The Farm Bill can accelerate progress toward this goal. The report [Opportunities to Reduce Food Waste in the 2023 Farm Bill](#) (coauthored by WWF) provides more detailed recommendations.

Key priorities for policies that will help achieve this goal include the following:

- **DEVELOP AND FUND STATE, LOCAL, AND TRIBAL GOVERNMENT LANDFILL POLICIES.** Increase funding for state, local, and Tribal governments to plan or implement proven policies that reduce food waste in landfills.
- **DIVERT SURPLUS FOOD TO ANIMAL FEED.** Direct USDA to provide guidance and build on growing interest from the private sector in creating circular solutions, including the potential for food surplus diversion to animal feed. Feeding livestock animals food surplus or food residuals that have been upcycled from raw, undervalued waste streams offers a [more environmentally friendly option](#) than conventional feed and promises to mitigate a range of environmental factors.

²⁵ Annually, 80 million tons of surplus food are not consumed. Farmers, manufacturers, other businesses, and households in the United States spend [\\$408 billion each year](#) to grow, process, transport, and dispose of food that is never eaten.

- **REDUCE SCHOOL FOOD WASTE.** Provide assistance to schools seeking to reduce food waste and to change cafeteria practices. Support for school data collection that reveals a better understanding of the potential inherent in food waste can ensure more food is eaten in schools and less is wasted.
- **STANDARDIZE AND CLARIFY DATE LABELS.** Oversee a campaign to standardize food labels in order to address confusion created by today's patchwork of inconsistent regulations and myriad date labeling terms such as "sell by," "best by," "expires on," and "use by."

In addition to decreasing food loss and waste at the consumer end, there is an important opportunity to reduce pressure on grasslands by reducing crop loss at the farm level. [No Grain Left Behind: Harvest Efficiency and Post-Harvest Loss](#), a 2022 report by WWF, used baseline primary data from a sample of farms to reveal average field-level loss on select corn and soy farms in the US. These losses not only impact farmers economically but have significant GHG and biodiversity impacts. Improving efficiency can reduce the acres needed to produce the same crop output.

USDA can leverage its resources, including IRA funding, to help farmers reduce crop loss by:

- **EXPANDING EDUCATION AND TECHNICAL ASSISTANCE FOR FARM OPERATORS TO PROPERLY SET, MAINTAIN, AND FINE-TUNE THEIR COMBINES TO HELP MINIMIZE HARVEST LOSSES.** USDA should develop and distribute information and training materials to farmers and farm operators; support trainings via grower associations, conservation districts, and cooperative extension; and expand technical assistance to help farmers make needed adjustments to their equipment and learn from the experiences of well-seasoned combine harvesters.
- **PROVIDING COST SHARE, GRANTS, AND LOANS FOR PRECISION HARVESTING EQUIPMENT AND TECHNOLOGIES.** Precision harvesting equipment uses technological advances such as sensors that automate combine setting and adjustments based on

real-world conditions, sensors that track grain loads and update yield calculations, autosteer and automatic guidance that improves efficiency, and data collection and management that improves overall tracking and understanding of where and how to make further improvements.

- **PROVIDING RESOURCES FOR IMPROVED STORAGE TECHNOLOGIES.** Farmers can reduce crop loss in storage by providing cost share and funding for technologies and by training to use equipment that will better maintain and preserve the condition of grain stored on-farm.

D. Retain prime farmland

Demand is high in the US and globally for lands to meet agricultural needs, with competing needs on the same lands—not to mention pressure from climate change—further complicating the situation. According to [American Farmland Trust](#), from 2001 to 2016, our nation lost or compromised 11 million acres of farmland. If this trend continues, we will lose another 18.4 million acres between 2016 and 2040.²⁶ This is

²⁶ M. Hunter et al., *Farms under Threat 2040: Choosing an Abundant Future* (Washington, D.C.: American Farmland Trust, 2022), https://farmlandinfo.org/wp-content/uploads/sites/2/2022/08/AFT_FUT_Abundant-Future-7_29_22-WEB.pdf.

added to the [10 million acres lost from the Central Grasslands between 2016 and 2020](#), largely to row crop agriculture.

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 to keep prime farmland in farming—an important part of the solution to conserving and protecting grasslands. The Agricultural Conservation Easement Program can help address farmland loss, by providing federal matching funds so producers can voluntarily and permanently protect agricultural and high-conservation value land. The 2014 Farm Bill reduced ACEP funding from an average of over \$700 million per year down to just \$250 million by FY2018. While the 2018 Farm Bill partially restored that funding to \$450 million in FY2019, this amount remains below historic levels, made even worse in recent years by inflation of land prices in many parts of the country.

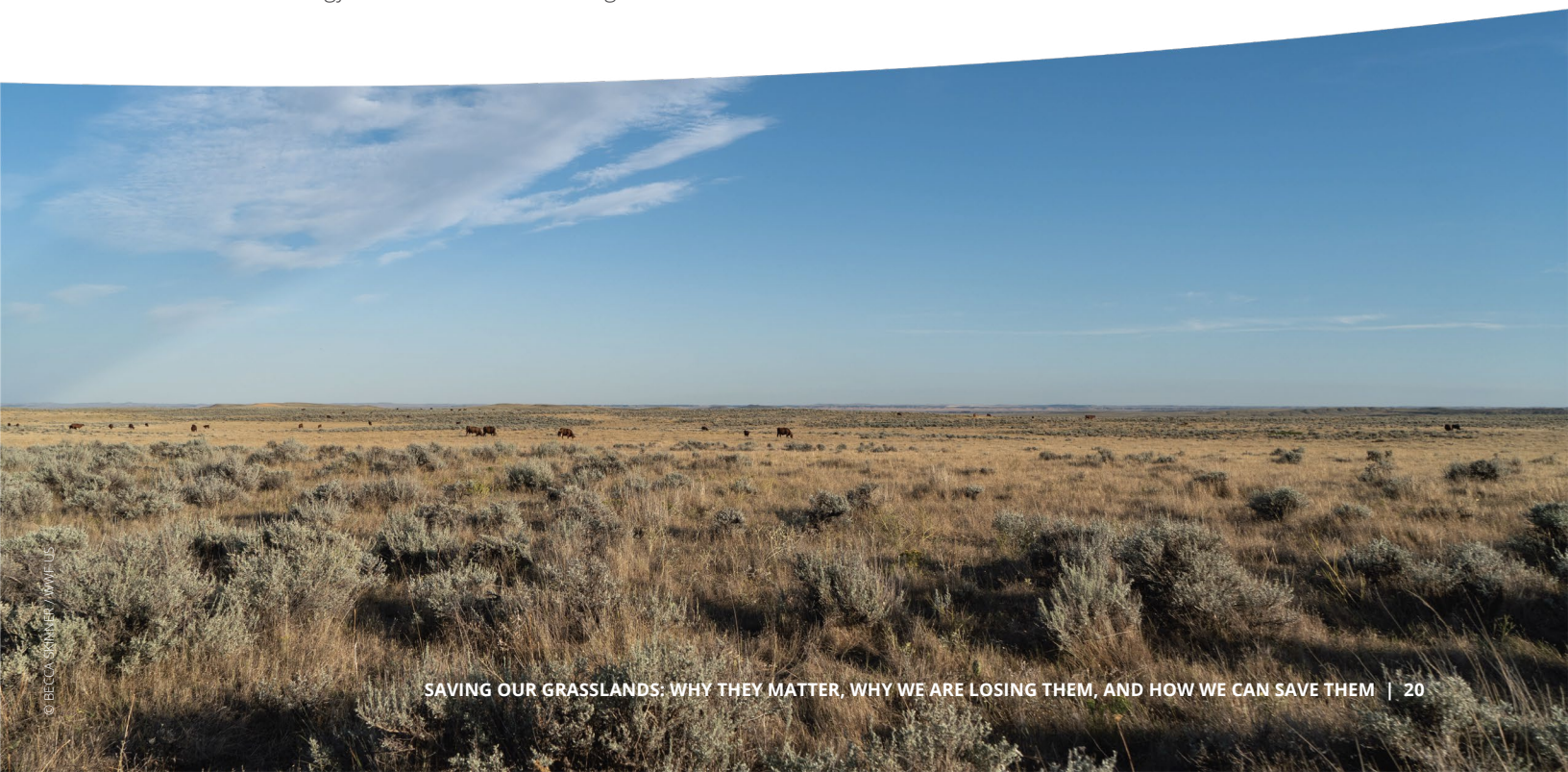
American Farmland Trust, in its [Farms under Threat](#) report, offers many beneficial recommendations intended to protect and conserve farmland.

E. Pass the North American Grasslands Conservation Act

With 85 percent of grasslands privately owned, the North American Grasslands Conservation Act empowers ranchers, farmers, and Tribes to restore and conserve grasslands and support the rural economies and wildlife species that depend on them, all while addressing the climate crisis. The Grasslands Conservation Act would invest in North America’s grasslands through voluntary, science-based efforts. This investment would help conserve grassland ecosystems while supporting working lands conservation to sequester carbon and to prevent wildfire and further loss of grassland and sagebrush wildlife.

Modeled after the hugely successful North American Wetlands Conservation Act, the Grasslands Conservation Act seeks to achieve the following:

- Establish a North American Grasslands Conservation Strategy for the protection, restoration, and management of grassland ecosystems across North America. The strategy would identify areas at high risk for grassland habitat loss, high-potential conservation areas, at-risk populations of grassland-dependent bird species such as sage grouse, and determine specific goals for enhancing grasslands. This strategy would draw from existing local, state, Tribal, and regional conservation plans and wildlife action plans.
- Establish a flexible Grasslands Conservation Grant Program for voluntary, incentive-based conservation of grasslands, including projects to restore degraded grasslands, increase carbon sequestration, improve grassland and rangeland health, mitigate the threats of wildfire and drought, improve biodiversity and support habitat connectivity, and restore watersheds.
- Create National and Regional Grasslands Conservation Councils that can recommend and approve grasslands conservation projects to be funded under the grant program, and provide recommendations on best practices that will support on-the-ground work already being done. The Councils will be composed of federal, state, and Tribal conservation organizations and different farming and ranching groups.
- Establish research initiatives on native seed crop systems and regenerative grazing practices.
- Support regenerative grazing research by establishing a jointly run pilot program to holistically study the effectiveness of regenerative grazing practices to mitigate the effects of the climate crisis on US Forest Service and Bureau of Land Management (BLM) lands.



IV. Conclusion: Why We Need Urgent Action Now

The time to act is now. This urgency is driven both by the need to curb and end current grassland conversion trends and by the looming impacts of climate change that could exacerbate those challenges in the future. Based on analysis of multiple studies,²⁷ projected climate changes in the region include increasing atmospheric CO₂; a longer warming growing season; and increased precipitation, likely received in more frequent extreme events. The region is also likely to face overall drier conditions as hotter days create more evaporative loss, increasing drought and water shortages in the southern part of the Central Grasslands, that could further drive crop production north. If, as some research indicates, climate change adversely impacts US crop yields for key crops like corn, wheat, and soy, this would put grasslands at greater risk of conversion as demand for land for crop production increases. The combination of these changes will impact soil, water, and biodiversity resources.

To change the trajectory of grassland conversion, keep remaining grasslands intact, and step up the pace on restoration, we must take meaningful policy steps that provide more significant protections and increase

investments in effective programs. We must also advance a robust dialogue and greater collaboration to save this ecosystem for people, nature, and climate alike. Critical policy steps include the following:

- Reform the RFS to conform to the requirements of the original law and to require validation that lands were in cultivation prior to 2007 to qualify for the program.
- Adjust RFS renewable volume obligations for total renewable fuel, to reflect the amount that can be produced from lands already in production in 2007.
- Follow the lead of the international sustainable aviation sector by encouraging or requiring sustainability criteria to drive further sustainability improvements from participating farms and feedstocks.
- Prevent crop insurance subsidies from de-risking converting grasslands to cropland, by strengthening the Sodsaver provision in the Farm Bill to end crop insurance subsidies on newly converted grasslands and by expanding the program nationally.
- Leverage the 2023 Farm Bill to expand investments in programs that conserve natural lands and support their sustainable management.
 - » Expand and enhance Grassland CRP with longer contracts, better targeting, and more support for sustainable grazing.

27 Brian J. Wienhold et al., "Vulnerability of Crops and Croplands in the US Northern Plains to Predicted Climate Change," *Climatic Change* 146 (2017): 219–30, <https://pubag.nal.usda.gov/catalog/5763081>; Justin Derner et al., "Vulnerability of Grazing and Confined Livestock in the Northern Great Plains," *Climatic Change* 146, no. 1–2 (2018): 19–32, https://www.ars.usda.gov/ARSUserFiles/30123025/PHACE/Derner%20et%20al%202017_ClimaticChange_Vulnerability%20of%20grazing%20and%20confined%20livestock%20in%20the%20Great%20Plains%20to%20climate%20change.pdf; Andrew Crane-Droesch et al., *Climate Change and Agricultural Risk Management Into the 21st Century* (USDA Economic Research Service, July 2019), <https://www.ers.usda.gov/webdocs/publications/93547/err-266.pdf?v=6035>.

- » Strengthen support in EQIP and CSP for priority wildlife initiatives and sustainable grazing.
 - » Improve capacity to provide technical assistance, by increasing staff and use of ITEK in conservation programs and increasing funding for CTA.
 - » Ensure that USDA consults with, empowers, and improves access to programs for communities that have faced historical and systematic marginalization and discrimination, which will bolster the role of Native nations in conserving and restoring grasslands.
- Leverage the Inflation Reduction Act to launch a new, strategic initiative to protect, restore, and improve management of the Central Grasslands, building on the extensive work of the [Central Grasslands Roadmap](#) and its [Assessment Map](#). This initiative should receive dedicated funding from EQIP and CSP, as well as acres from Grassland CRP.
 - Reduce food loss and waste by investing in national, state, local, Tribal, and school food loss reduction programs, providing guidance to divert food scraps for animal feed, addressing food date labeling confusion, and further investing in technical assistance and technologies to reduce crop loss.
 - Invest in programs to keep prime farmland in farming to reduce pressure to convert grasslands.
 - Pass the North American [Grasslands Conservation Act](#).

The benefits of action are significant and promise to bring no regrets. Protecting and restoring North America's grasslands can do more than boost habitat: it will advance nature-based solutions for sequestering carbon into the soil; reducing the impacts of climate change; and improving landscape resilience while supporting Native nations, ranchers, farmers, sportsmen and -women, and rural communities.

We must act now to maintain grassland systems for sustainable ranching, wildlife habitat, and carbon sequestration, both for today and for future generations. By investing in North America's grassland ecosystems, we have the opportunity to drive effective, science-based efforts to conserve these ecosystems while supporting working lands conservation to sequester carbon and prevent further loss of grassland wildlife.



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together possible

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