I. INTRODUCTION

This essay argues that we need to decide now whether reliance on a jigsaw puzzle of unrelated voluntary programs for protecting native grasslands constitutes an adequate national policy. Too often, conservation turns out to be an ex post facto effort; when we have very nearly eliminated a resource, we become regretful and try to reverse the process or salvage some remnant.\(^1\) One example is the history of nonpoint sources of water pollution from farm fields, where reliance upon voluntary remedial efforts failed completely.\(^2\) Now, more than 50 years later we are still trying to decide how to reverse the damage. In the case of the remaining native grasslands, now is the time to decide whether the current approach based on voluntary conservation is sufficient. If not, alternative approaches must be considered, and considered urgently.

We will never have more native grasslands and wetlands than we have today;\(^3\) tomorrow the amount will be smaller, and the next day, even smaller. It is essential that we determine whether voluntary conservation of this resource will be adequate and, if not, get on with a more direct approach. To move that discussion along, this essay describes some of the voluntary efforts now underway in North America, and offers proposals for a more comprehensive national policy.

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1. ALDO LEOPOLD, A SAND COUNTY ALMANAC & OTHER WRITINGS ON ECOLOGY AND CONSERVATION 492 (Curt Meine ed., 2013) ("One defect in conservation is that it is so far an ex post facto effort. When we have nearly finished disrupting a fauna and flora, we develop a nostalgic regret about it, and wish to save the remnants. Why not do the regretting and saving in advance?").


II. THE GREAT CARBON OCEAN: WHY PROTECT GRASSLANDS?

Land conservation priorities have favored visually dramatic resources — mountains, forests and shores. As a result, we enjoy national seashores, public forests and parks in every mountain range. These conservation achievements have, however, overshadowed a more visually humble but no less vital resource — native grasslands of North America.  

Our native grasslands are the most subtle and complex of resources, but to those who have taken the time to know it, there is nothing comparable. What to the untrained eye may seem to be a simple monoculture is in fact one of our most diverse sources of plant, soil, insect, and animal life. Untold numbers of species have evolved to take advantage of a massive continuum of habitat, and are, as a result, especially vulnerable when prairie is fragmented and converted to cropland and other land uses. Prairie is also home to a rich traditional culture and economy based on cattle grazing. But, in today’s world, the greatest value of prairie is likely to be found in its capacity to absorb and hold atmospheric carbon.

Native grasslands create organic carbon below ground, much as trees create it above ground. Grasses can store carbon quickly and because the carbon is safely underground, it is secure from catastrophic events such as fire. Plowing, however, releases the underground carbon, adding significantly to greenhouse gas concentrations while eliminating habitat used by untold hundreds of species.

When prairie land is protected, an ocean of carbon is secured. Because of this, we must ask whether it makes sense to expend resources on attempts to control releases of carbon from coal-based energy plants and other similarly large sources while simultaneously releasing an immeasurable ocean of carbon by plowing up our prairies. These more prominent climate change mitigation initiatives focus on removing greenhouse gases at specific point sources such as power plants, which typically burn fossil fuels. While an essential part of any climate mitigation plan, this approach will be gradual, allowing atmospheric gases to continue to accumulate. It also fails to address the threat of carbon

10. Id.
11. Id.
released from dispersed or “nonpoint” sources\textsuperscript{12} as well as the challenge of actually removing carbon already in the atmosphere. Even if the point source reduction program is effective there is now enough carbon in the atmosphere to support continued warming. Combining the existing (old) carbon and the carbon being added by dispersed and unregulated nonpoint sources, there is reason to argue that the point source program alone is insufficient. While possible nonpoint sources of carbon are many, few compare in potential to native grasslands.

We have lost nearly 250 million acres of Tallgrass Prairie alone, which once supported at least 1500 types of plants and grasses, and held vast amounts of carbon.\textsuperscript{13} An estimated 80 percent of Shortgrass Prairie has been converted to crops as well. This conversion of prairie that began with the Tallgrass and Shortgrass is now carving into the Mixed and remaining Shortgrass. Nearly 53,000,000 acres of native grasslands—an area the size of Kansas—have been converted across the Great Plains since 2009. That represents approximately 13 percent of the 419 million acres that remained intact in 2009.\textsuperscript{14} The rate of conversion is increasing each year.\textsuperscript{15} The current rate of conversion in the Dakotas and eastern Montana, compounded annually, means that 77 percent of the prairie grassland in existence today will be lost in the next 99 years.

Prairie conservation is a particular challenge because the larger public does not perceive its value and there is no great reservoir of public lands upon which to found conservation, attract visitors, and make the case for preservation. At least ninety-five percent of the land in key prairie states such as Nebraska, the Dakotas and Kansas is under private ownership.\textsuperscript{16}

III. The Incentive To Plow

While native grasses are lost to various land use changes, such as urbanization and industrialization, the greater losses are the result of

\textsuperscript{12} Use of the words “nonpoint sources” is an intentional reference to federal water pollution laws. When, in 1972, Congress enacted legislation to regulate water pollution, it made a policy choice to focus on large, specific pollution sources such as industrial plants and municipal sewers. Through a closely defined permit system, great strides were taken. The Congress’ policy choice, however, left other pollution sources unregulated, particularly runoff from farms and farm fields. As it happens the unregulated “nonpoint sources” cumulatively now threaten to swamp the progress made in controlling large, specific sources. For a detailed account, see N. William Hines, History of the 1972 Clean Water Act: The Story Behind How the 1972 Act Became the Capstone on a Decade of Extraordinary Environmental Reform, 4 GEO. WASH. J. ENERGY & ENVT'L. L. 80 (2013).

\textsuperscript{13} See generally FOLLETT, supra note 9, at 401–30 and John W. Head, supra note 5, at 62–63.


\textsuperscript{15} 2016 Plowprint Report, supra note 14.

\textsuperscript{16} Id.
conversion to tilled fields in order to grow commodity crops. Numerous incentives encourage this plowing. Direct cash and subsidy programs are directed exclusively toward the growers of commodities such as corn, soybeans, rice, cotton and wheat and create an incentive to plow. Because cattle grazers on our grasslands do not receive these subsidies, the attraction to plow is strong. Phrased in practical terms, a rancher who plows native grasses and plants a commodity such as soybeans or corn, can then go to the local office of the Department of Agriculture and enroll in Farm Bill programs which offer direct cash payments, subsidized revenue protection insurance and the benefits of disaster relief as well. The payments and resulting financial security constitute a perverse incentive to plow. On top of this, Congress now provides substantial subsidies for ethanol and biodiesel production. The resulting increase in grain prices further encourages livestock growers to plow prairie and forsake grazing in favor of the industrial confinement methods of meat production. Genetically modified seeds now allow corn and soy production in semi-arid regions, which have historically only been hospitable to ranching. Even state laws may play a role; for example, South Dakota taxes grasslands as corn fields even when the land is used for grazing.

On top of these incentives is the consolidation of farming along industrial lines. While agriculture camouflages itself under the label of “family farmers,” the truth is otherwise. Land holdings are consolidating rapidly and field agriculture is organizing on the corporate model, in which annual profits provide the principal measure. The 2012 Census of Agriculture, which states that non-resident and non-farmer investors hold 40 percent of agricultural lands, bolsters this point. Landowners who hold lands primarily in anticipation of a return on invested capital press for the highest return, which often means converting grass to crops.

Finally, according to the 2012 Census of Agriculture, almost 34 percent of principal farm operators were 65 or older and 62 percent were 55 or older. It follows, almost without saying that we are on the verge of one of the largest changes in land tenure since Homesteading days, or, perhaps, the Dust Bowl.

24. Id.
25. Id.
One way or another, at least half of the land in cropland, pastureland, and rangeland will soon change hands. While we can only speculate about the full nature and effect of this change, it is difficult to deny its importance and its potential implications for both farm, environmental and climate policy.

The change will occur in a variety of ways. In many cases, existing farm and ranch businesses will simply absorb new lands, by either lease or purchase. Inevitably, individual non-farm investors will see this farmland as an investment opportunity, and purchase with the intention of leasing to area farmers. Most important, it is probable that “outside” investment capital will flow toward agricultural land, as money seeks safety, steady return, and the chance for eventual capital gains.26

The significance of this changing land tenure is the likelihood that farming and ranching is soon to be more disconnected from the idea of land and land stewardship. Farmers and ranchers in the United States managed to avoid, for a surprisingly long period of time, viewing land as just another commodity to be bought, sold and traded.27 It can be foreseen that the changes now underway represent, in the new language of globalization, the “commodification” of agricultural land. Efforts to protect grasslands will therefore occur within a changing economic and land tenure system.

IV. RANCHING AS THE EXCEPTION TO THE “SAFE HARBOR” OF FEDERAL AGRICULTURAL POLICY

Nearly all of the New Deal agricultural legislation remains on the books,—admittedly in a new shape,—yet the farming structure to which it applies has changed from the rural agrarianism the New Dealers promoted to an urban industrial agriculture organized along factory lines.28 Despite this change, Congress has continued to invest billions annually in support of tilled-field, row-crop agriculture.29

Today, farmers who grow commodities receive revenue protection, a fact not widely understood. The current medium for delivering this protection is described as crop insurance, although it is hardly insurance as most people think of these things.30 The general policy of Congress is that farmers who deal with

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30. Bruce Babcock, Cutting Waste in the Crop Insurance Program (Envt'l Working Group, 2013); David A. Hennessy, Land Use Consequences of Crop Insurance Subsidies in America’s Grasslands: Status, Threats and Opportunities, supra note 8, at 22.
weather and other risks deserve a safety net and because a safety net helps assure a stable agricultural commodity sector, the policy is in the public interest. But crop insurance is a thing quite different from the car, property, and health insurance familiar to us all. The premiums paid by farmers who purchase federal crop insurance cover only about 40 percent of projected payouts and the U.S. Treasury picks up the remainder. In addition, the Treasury also pays all administrative costs – i.e. the commissions paid to the private insurance agents and the profits of the companies which administer the policies.

Most people also think that crop insurance protects against low yields resulting from weather, drought and related problems and, indeed, that option is available under the Farm Bill. But most farmers buy policies that protect them against revenue declines. At the beginning of the growing season a farmer projects the expected crop price times expected yield. Then, after harvest, that amount is compared to the actual revenue to determine whether a payout is required. The lesson is that crop insurance is in fact just a continuation of the New Deal emphasis on protection against low farm revenue for commodity farming. The difference is that the amount of money paid out would shock a New Dealer.

This extraordinary protection against lost revenue is exactly the protection that is not available to the ranching sector of the agricultural economy. The result leads to an incentive for ranchers to plow grasslands, grow commodity crops and thus enter the safe harbor of revenue protecting subsidies. This compelling economic factor often arises in combination with the availability of drought-resisting seed technologies as well as a general warming in the growing regions, to make conversion of grasslands enticing. At base, however, protection for commodity field agriculture represents a comprehensive federal policy. Similarly, the decision to exclude the ranching economy from similar protection also represents a federal policy, at least by default. The ramifications for native grasslands cannot be denied, however, as ranchers today seek the safe harbor of the Farm Bill.

V. VOLUNTARY CONSERVATION IN THE GRASSLANDS

Grasslands conservation today depends on incremental local initiatives from both the ranching industry itself and interested conservationist supporters. Small representative samples are held by conservation organizations, some are held by state wildlife agencies, and the remainders are in private hands.

31. Id.
32. Id.
34. 7 U.S.C. § 1508(c) (Supp. 2016).
35. Id.
A. Private Initiatives by Ranchers

An encouraging beginning point is with efforts within the ranching industry to protect the grassland resources and the ranchers that depend on them. Of these, several rancher-initiated land trusts stand out as examples. The Colorado Cattlemen’s Agricultural Land Trust was founded in 1995 by ranchers “to protect their agricultural lands and encourage the intergenerational transfer of ranches,” and to “preserve natural resources and agricultural heritage.” It now holds perpetual easements on more than 500,000 acres of grass. The Wyoming Stock Growers Land Trust was also founded by ranchers interested in “conserving Wyoming’s working family ranches and farms and the wide-open spaces, natural habitats, and rural communities they support.” It now holds perpetual conservation easements on 236,912 acres. The California Rangeland Trust exists to “conserve California’s working ranches that provide stewardship, open space, and natural habitat for future generations.” It now protects just under 300,000 acres with nearly 500,000 acres on a waiting list.

A second model of rancher-initiated efforts are groups which emphasize the encouragement of a new generation of skilled grazers. Representative organizations are the South Dakota Grassland Coalition and the North Dakota Grazing Lands Coalition. These focus on mentoring young grazers and promoting the latest knowledge about grazing techniques. Operated by ranchers, their importance is to remind us that saving grasslands is not enough; we must also have new generations of “human capital” that are capable of managing these protected lands in the best way.

B. Community-Based Grassland Initiatives

Closely related to the rancher-initiated efforts are a variety of community-based outreach experiments. One example is the Northern Prairies Land Trust in Nebraska and South Dakota, which since 2004, has implemented improvements in cooperation with private landowners on unbroken Tallgrass prairies. Biologists are based in rural communities in order to establish working relationships with ranchers. The primary purpose is not to promote conservation

43. Id.
easements, but to help landowners manage their properties for increased grassland production and improved native habitat. To date Northern Prairies has nearly 100 active projects. All totaled, they implement many hundreds of required conservation actions, such as grazing deferments, invasive tree control, and prescribed burning, all on unbroken tallgrass prairie.

Northern Prairies’ projects have improved rare native habitats, but what makes the projects sustainable is that they also improve the production of native grasslands for livestock and hay production, thus increasing the incomes and economic security of ranchers. Prairie degradation is widespread and detrimental to the economic security of landowners. To be successful, conservation projects must increase profitability for the landowner, because the key to prairie conservation is the sustainability of the ranching economy and culture.

Basing biologists in local communities is advantageous because native prairie management techniques are slow to trickle down to rural landowners. Most prairie management on private lands actually mirrors practices implemented during European settlement when the understanding of prairies was poor at best. However, Northern Prairies’ habitat projects have incorporated ecologically sustainable practices such as burn-driven grazing, plant community management, intensive grazing, extensive rest from grazing, selective herbicide treatments, and native ecotype reseeding. These practices and concepts were once novel in eastern Nebraska, but are now gradually catching on. The grass roots efforts of Northern Prairies and other local groups are both admirable and innovative. In some areas, especially southeast Nebraska, conservation is occurring on a scale which goes beyond isolated properties to encompass broader landscapes.

C. Tax Incentives for Conservation Easements

Conservation easements held by qualified land trusts or public agencies do represent a conservation tool in active use, something which the U.S. Congress recognized in 2015 when it made permanent the enhanced tax incentives for landowners who donate conservation easements to qualified private land trusts or governments. Under [insert statute], a person who donates a conservation easement can deduct up to 50 percent of her or his annual income as a charitable contribution, including contributions of those conservation easements, and may take the tax deduction for a so-called carry-forward period of 15 years. Even more important for grassland policy, qualified farmers and ranchers can deduct up to 100 percent of their income.
These tax incentives are strong inducements for donor-landowners who are in a position to take advantage of them, but they do not represent a national policy of grassland protection. Donated easements are sometimes adjacent to or associated with very large contiguous grasslands, but too often they are fragmented and scattered, a particular problem with grasslands, which are large, landscape scale ecosystems. In addition, there are real questions whether working ranchers hold financial positions that benefit from federal tax deductions. More practical incentives for working ranchers to donate easements are tools to resist urban and suburban encroachment, assisting in inter-generational transfers, and reducing property tax valuations. These incentives are not always touched by the availability of federal tax deductions, but the conservation easement is often essential.

In contrast, the enhanced tax incentives can be particularly attractive to non-rancher purchasers who can use the tax deductions against income earned in non-agricultural pursuits. Viewed from this angle, the tax deductions may actually work against the ranching community by attracting outside investors who in most cases are able to bid-up the local land values. On the other hand, there are many examples of non-ranching purchasers achieving major conservation goals.51

D. Miscellaneous Funding

Because wetlands and native grasslands often occur together, programs that fund the protection of wetlands also work to save grasslands. An example is the North American Wetlands Conservation Act,52 which funds grants that protect bird populations and wetland habitat. Along similar lines, the Migratory Bird Conservation Fund (the “Duck Stamp” act)53 provides funds to the U.S. Fish & Wildlife Service to protect wetland habitat and to purchase conservation easements.

VI. HINTS OF A FEDERAL GRASSLANDS POLICY

The 2014 Farm Bill contains a glimmer of interest in grasslands policy. A “pilot” program of crop insurance for cattlemen is authorized, limited to “index-based weather insurance.”54 Such a minor program usually means that the U.S.D.A. sets up a local experiment in order to gauge interest and agency capacity. Narrow in scope, it is thought that this “Pilot Insurance Program” indicates an interest on the part of Congress to extend the crop insurance.

The Farm Bill also contains a “sodsaver” provision aimed at reducing cropland expansion into previously uncultivated areas by reducing the crop insurance premium subsidies on land converted from native grass.\textsuperscript{56} Regrettably, the law limits application to six specific states, and two-thirds of grasslands conversions that have occurred since the Farm Bill’s enactment occurred outside these states.\textsuperscript{57} Traditionally, programs that encouraged conservation practices were independent of price support and other revenue programs. In 1985 Congress for the first time introduced cross compliance, making some minimal conservation practices a condition of receiving farm program benefits.\textsuperscript{58} The original sodsaver provision was designed to ensure that no highly erodible land would be placed into production of an agricultural commodity for the first time without adherence to a conservation plan. An effective sodbuster for native grasslands will need to be nationwide and carry a sufficient level of subsidies to discourage plowing.

\section*{VII. PROPOSED SOLUTIONS}

America’s conservation and resource management choices are too often driven by the visually dramatic. Perhaps that is a natural result of the time during which those decisions were made. Yellowstone, Yosemite, Grand Canyon, Grand Teton and similar places were described by the impact they had on visitors in the 18\textsuperscript{th} and 19\textsuperscript{th} century. In other words, it is fair to surmise that they were informed as much by aesthetic as by scientific values. In addition, influential conservationists of the time, represented by Gifford Pinchot, were forest and mountain people, who knew very little about grasslands, and whose backgrounds did not allow them to appreciate what was there. Today, however, science teaches that it is often these more subtle and less dramatic resources — grasslands, wetlands, and headwaters — that contribute the most to the public interest. Were we to re-visit the early 19\textsuperscript{th} century, knowing what we now do, we would create a Prairie Pothole National Park, and a Great Central Grasslands National Park. The question before us now is how to develop an effective national grasslands policy.

\subsection*{A. Grasslands in the 2018 Farm Bill}

Healthy native grasslands are as important to the public interest as is healthy commodity agriculture. To assure the latter, Congress has created an elaborate and expensive system of subsidies. It is now necessary to establish a

\begin{itemize}
\item \textsuperscript{55} 2014 Farm Bill Drill Down: Conservation – Crop Insurance Linkages, NAT’L SUSTAINABLE AGRIC. COAL. (Feb. 10, 2014), http://sustainableagriculture.net/blog/2014-farmbill-hel-wetlands/.
\item \textsuperscript{56} 7 U.S.C. § 1508(o)(2) (Supp. 2015).
\end{itemize}
comparable policy for grassland agriculture, and the proposed 2018 Farm Bill, now under active preparation, provides the opportunity. Such a policy should first provide ranchers with the opportunity to come within the safe harbor of the Farm Bill not only for protection against weather-related calamity, but revenue loss as well. By doing so, a primary incentive for plowing grassland will have been reduced. Such a policy should be reinforced with a solid sodsaver provision, barring entry of newly plowed grasslands into the safe harbor of the Farm Bill.

B. Build Upon and Reinforce Existing Voluntary Initiatives

A national grasslands policy should take advantage of the extraordinary initiatives that have grown within the range industry. The mentoring of a new generation of range managers is, at present, a small, private initiative, but it is proving to have real potential that can expand if supported with sufficient funds. Land trusts that protect grasslands should be encouraged further, perhaps by public augmentation of the endowment funds required as part of each donated easement.

C. Recognize the Importance of the Carbon Sequestration Benefit

The economic value of carbon sequestration provided by native grasses is particularly high when it is compared to the cost of eliminating sources in the energy and transportation sectors of the economy. That said, a market structure of direct value to ranchers and other conservationists has been slow to develop. Too many efforts at creating a market have been local, fragmented or just local ad hoc transactions. There is a need for a nationally recognized market with uniform and predictable features. Such a market will lower transaction costs, establish regular appraisal methods, and become more accessible for use by land trusts and individuals.

D. Acknowledge the Role of the “New Public Lands”

Incrementally, through private conservation easements held by land trusts and similar non-profit organizations, and public agricultural and wildlife easements held by the federal U.S. Departments of Interior and Agriculture, a substantial body of conservation interests in real property is accumulating, and is in need of coordinated management as a valuable sub-set of other public lands. That these lands are not owned outright by the public is a difference in degree only, a difference that highlights the fact that as population and consumption increase, and as our realization of the public interest changes, ever more condensed forms of land ownership and use emerge.

Accommodating private and public interests in unique lands is a constant theme of property law. The proposed category of “New Public Lands” represents a stage in this progression. If the phrase “public interest easements” is substituted for “conservation easements,” the matter comes into focus. Rather

59. S.D. Grassland Coal., supra note 41; N.D. Grazing Lands Coal., supra note 42.
than protecting the public interest by direct acquisition or regulation, it is protected by voluntary transactions that allow for private activity to continue, subject to limitations in support of the public interest, all laid out in detailed documents that are part of the legal title. Such a hybrid system of ownership is evolving into a new category of public lands, and should be so recognized. If it can be agreed that there is a substantial public interest in maintaining grasslands, and if it can also be agreed that an active private ranching economy based on grazing can co-exist with legal protections for grasslands, the hybrid interest should be encouraged.

E. Leadership of the International Community

Conservation ethics have spread to other parts of the world because the United States led the way, but our example is now tested as we sacrifice our great carbon ocean while insisting that people in other nations preserve their forests and prairies. By adopting a strong grasslands policy in the United States, an example can be set on which an international program may be based.

VIII. Conclusion

The lesson here repeats that which environmental managers have experienced so often in the past: pollution control and wise resource management are essential parts of the same whole, and to ignore one in favor of the other is to invite failure. The earth is warming due to human activities, with a significant portion attributable to industrial production. However, if we reduce greenhouse gas production at industrial facilities while simultaneously sacrificing our native grasslands, with the accompanying result of releasing a vast amount of carbon into the atmosphere, we will have been rowing in opposite directions. Serious efforts to avert climate change should consider both.