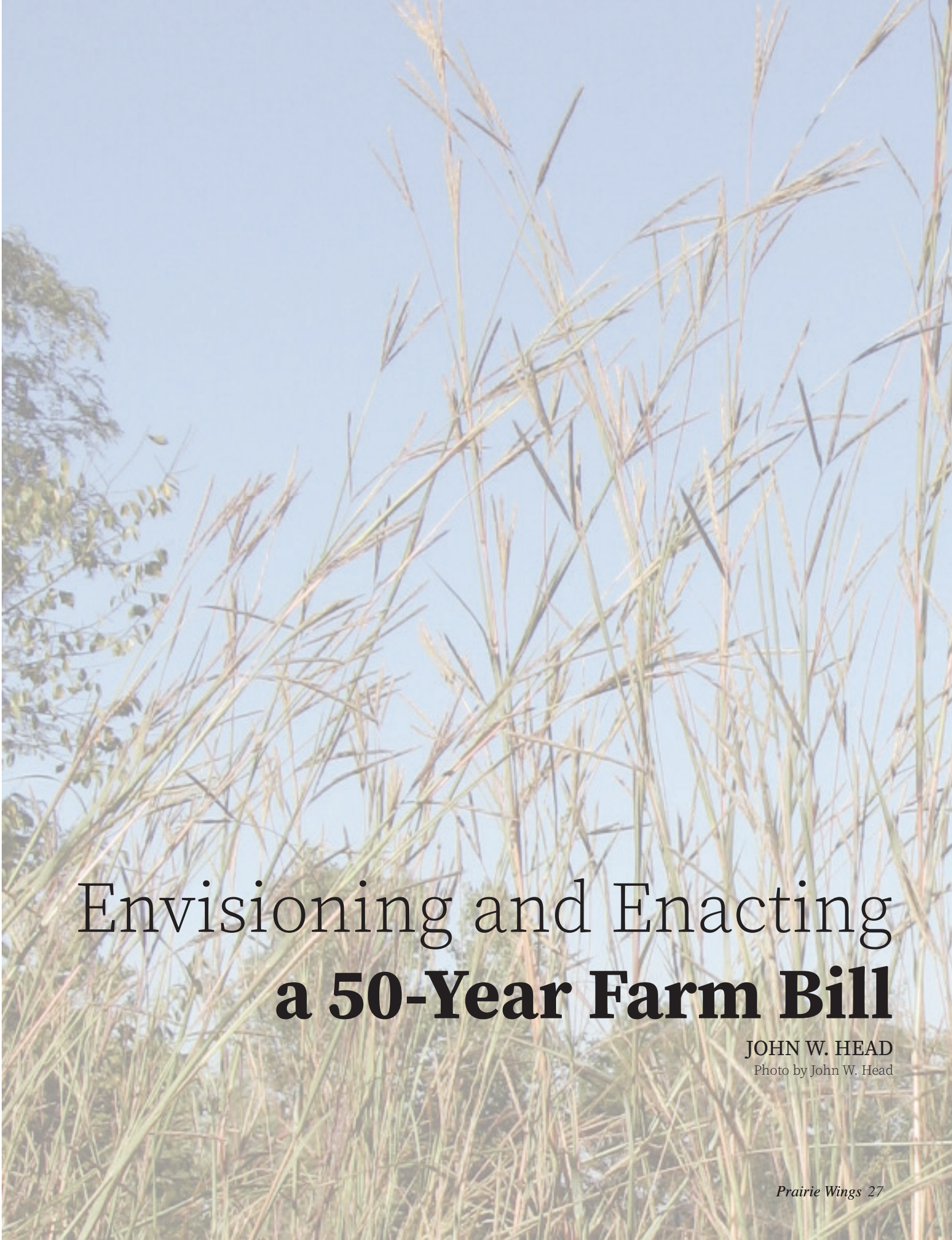

Envisioning and Enacting **a 50-Year Farm Bill**

JOHN W. HEAD

Photo by John W. Head

How about taking a longer-term view toward farm policy and ecological sustainability? The usual Farm Bill cycle runs only half a decade: roughly every five years a new debate begins, new proposals and priorities compete, and a new Farm Bill emerges. Some matters, in my view, are important enough to require a much longer time-horizon than this.

The January 4, 2009, edition of *The New York Times* features a column written by Wes Jackson and Wendell Berry titled "A 50–Year Farm Bill." Drawing attention first to the catastrophic soil erosion that large rains caused in Iowa in the summer of 2008, Jackson and Berry explain in that column that it is agriculture itself, not the rains or other natural causes, that must be blamed for the long-term degradation of the world's soil. Jackson and Berry point particularly to "industrial procedures and technologies alien to . . . nature," and then they offer this elaboration:

> *Agriculture has too often involved an insupportable abuse and waste of soil, ever since the first farmers took away the soil-saving cover and roots of perennial plants. Civilizations have destroyed themselves by destroying their farmland. This irremediable loss, never enough noticed, has been made worse by the huge monocultures and continuous soil-exposure of the agriculture we now practice.*
>
> *To the problem of soil loss, the industrialization of agriculture has added pollution by toxic chemicals, now universally present in our farmlands and streams. Some of this toxicity is associated with the widely acclaimed method of minimum tillage. We should not poison our soils to save them.*
>
> *Industrial agricultural has made our food supply entirely dependent on fossil fuels and, by substituting technological "solutions" for human work and care, has virtually destroyed the cultures of husbandry (imperfect as they may have been) once indigenous to family farms and farming neighborhoods.*
>
> *Clearly, our present ways of agriculture are not sustainable, and so our food supply is not sustainable. We must restore ecological health to our agricultural landscapes, as well as economic and cultural stability to our rural communities.*[1]

Having identified the key problems of agriculture—soil loss through the use of monocultures and soil exposure, the toxicity of agricultural chemicals, a dependency on fossil fuels, and over-reliance on technological "solutions"—Jackson and Berry then assert that a principal way of addressing those problems is through concentrating on perennials:

> *Any restorations will require, above all else, a substantial increase in the acreages of perennial plants. The most immediately practicable way of doing this is to go back to crop rotations that include hay, pasture and grazing animals.*
>
> *But a more radical response is necessary if we are to keep eating and preserve our land at the same time. In fact, research in Canada, Australia, China and the United States over the last thirty years suggests that perennialization of the major grain crops like wheat, rice, sorghum and sunflowers can be developed in the foreseeable future. By increasing the use of mixtures of grain-bearing perennials, we can better protect the soil and substantially reduce greenhouse gases, fossil-fuel use and toxic pollution.*
>
> *Carbon sequestration would increase, and the husbandry of water and soil nutrients would become much more efficient. And with an increase in the use of perennial plants and grazing animals would come more employment opportunities in agriculture—provided, of course, that farmers would be paid justly for their work and their goods.*[2]

Jackson and Berry conclude their essay by urging legislative action that reflects a national agricultural policy to bring radical change to food production and rural life:

> *Thoughtful farmers and consumers everywhere are already making many necessary changes in the production and marketing of food. But we also need a national agricultural policy that is based upon ecological principles. We need a 50-year farm bill that addresses forthrightly the problems of soil loss and degradation, toxic pollution, fossil-fuel dependency and the destruction of rural communities.*[3]

[1] Wes Jackson and Wendell Berry, "A 50-Year Farm Bill," ***The New York Times***, Jan. 4, 2009
[2] Ibid.

A few months following the publication of the *Times* column, the research institute that Wes Jackson founded and presided over for many years—The Land Institute—prepared a brochure elaborating on the idea of a 50-Year Farm Bill that would set the United States on a course toward making a systemic change in agriculture.

I agree with the theme of these efforts—we definitely need a Farm Bill that will span a matter of decades, not just years—and in a book published in December 2016 *(International Law and Agroecological Husbandry)* I offered an updated and enlarged description of the proposals appearing in the 2009 column by Wes Jackson and Wendell Berry and in the "50-Year Farm Bill" brochure as prepared by The Land Institute. In the following paragraphs I summarize some highlights from that portion of my book.[4]

Aims of a 50-Year Farm Bill

The overall aim of a 50-year Farm Bill for the United States would be to reorient U.S. policy on a cluster of issues. Grain production would be at the center of those issues, for the simple fact that roughly three-quarters of U.S. acreage currently devoted to crops is devoted to grain production, and roughly 70 percent of human caloric intake in this country comes from grains. The global figures are similar, and in fact the adoption of a 50-Year Farm Bill for the United States could help trigger similar legislative initiatives in other countries.

In addition to the issue of grain production, the cluster of policy issues that a 50-Year Farm Bill would address also includes these:

Biodiversity and ecosystem health.
The Millennium Ecosystem Assessment conducted a few years ago under United Nations auspices identifies agriculture as the "largest threat to biodiversity and ecosystem function of any single human activity."

Soil degradation and erosion.
Specifically, soil degradation is an inevitable consequence of the annual-monocultures form of agriculture that has dominated grain production for thousands of years. As I envision it, a new farm policy as set forth in a 50-Year Farm Bill would aim to break that domination and transform grain-and-legume agriculture to a perennial-polycultures model of production. Doing so would reduce erosion, protect soil nutrients, reduce soil toxins, and manage soil nitrogen efficiently.

Water pollution from agricultural run-off.
Recent figures show that agriculture is responsible for 70 percent of U.S. water contamination, and 40 percent of U.S. waters are unfit for swimming and fishing. Moreover, the leaching of nitrogen compounds from the agricultural lands of the Mississippi Basin is responsible for one of the largest dead zones in the world— the area just off the Mississippi delta in the Gulf of Mexico. A 50-Year Farm Bill could begin a reversal of that trend by obviating the agricultural run-off pollution.

Agricultural-pesticide dangers.
Pesticides are present in nearly every water and fish-tissue sample from streams and rivers in agricultural areas in the United States. A natural-systems agriculture policy adopted through a 50-Year Farm Bill could drastically reduce pesticide use.

Fossil-carbon dependence.
I believe it should be a goal of a 50-Year Farm Bill (and of other legislative and policy initiatives) to cut fossil-fuel dependence to zero. Most of the elimination of agriculture's current fossil-carbon dependence could be accomplished by phasing out fossil-carbon-based fertilizers and other agricultural chemicals—as would be possible with the nutrient cycling that is central to a natural-systems form of grain production built around perennial polycultures.

Greenhouse gas emissions (GHG) and global climate change.
Carbon sequestration should also be a goal of a 50-Year Farm Bill. An even more aggressive goal could be to drastically transform U.S. agriculture's role in the trajectory of global climate change. A 50-Year Farm Bill could realistically set and achieve this goal by adopting a natural-systems agriculture policy that would reduce GHG emissions not only by: (i) phasing out fossil-carbon-based fertilizers and other agricultural chemicals, (ii) reducing fossil-fuel inputs for mechanized farm operations, but also by (iii) reducing those forms of livestock production that produce the most damaging volumes of methane emissions[5], and (iv) increasing carbon-sequestration capacity of farmland through the development of deep and complex below-ground root-mass typical of perennials.

Farm and rural community restoration.
A different category of goals for a 50-Year Farm Bill would be economic and social in character. As Jackson and Berry pointed out in the last line of their *New York Times* column, "we need a 50-year farm bill that addresses forthrightly the . . . destruction of rural communities" that modern extractive agriculture has brought to the United States in the past several decades—a destruction that I have seen first-hand where I grew up in northeast Missouri.

In short, a 50-Year Farm Bill would aim to reorient U.S.

[3] Ibid.
[4] John W. Head, *International Law and Agroecological Husbandry: Building Legal Foundations for a New Agriculture* (Routledge, 2016).

policy not only on grain production but also on biodiversity, soil health and conservation, water quality, human health, independence from fossil-carbon dependence, climate health, and rural restoration.

Legal and Financial Initiatives

What provisions could a 50-Year Farm Bill include? I believe it should require numerous legal actions to address the economic, ecological, and social unsustainability of modern extractive agriculture. In a bare-bones, bullet-point list, those actions include:

• Take action through subsidies and other incentives to reduce the high entry costs and other hurdles to small farmers and beginning farmers.

• Strengthen measures to increase the size and diversity of farm populations and rural populations by improving economic and social conditions.

• Provide support for the diversification of crops, partly through an extensive reorientation of agricultural subsidies. Such a reorientation would sharply reduce financial support for the small cluster of currently-favored crops and sharply increase financial support for other crops—particularly the grains and legumes currently emerging (or to emerge) from research into perennial polycultures that lie at the heart of natural-systems agriculture.[6]

• As one part of this subsidization, provide funding to expand dramatically the ongoing scientific research into perennial species of food grains and legumes that can gradually supplant the annual crops that dominate today's agriculture.

• Likewise, provide adequate funding to expand dramatically the ongoing scientific research into food-crop polycultures. Perennial grains have many advantages over annuals, but ultimately a "mimicking" of the prairie architecture requires the development of *mixtures* of several species in a single field—different mixtures, of course, in different climatic and soil conditions.

• Remove fossil-carbon subsidies.

• Stiffen agriculture-specific anti-pollution protections to reduce the ecological damage caused by agricultural runoff and pesticide use and as part of the overall effort to internalize the negative externalities of modern extractive farming and thereby help facilitate a shift to what I call agroecological husbandry.

• Impose a system of penalties for greenhouse gas emissions from agricultural operations and credits for carbon sequestration.

• Give special legal and regulatory attention to livestock production in order to reduce its contribution to global climate change.

• Adopt as national policy the Precautionary Principle as practiced in Europe and as reflected in numerous international legal instruments, and have this policy reflected in all agriculture-related decisions – including those bearing on the manufacture, testing, and use of agricultural chemicals.

In my view then, we should look beyond a five-year farm bill. Let's envision a 50-Year Farm Bill that puts in place the specific types of requirements, restrictions, and initiatives listed above, in order to bring fundamental change to United States agriculture. Naturally, we won't agree at the outset on all the details, or even on all the goals. However, modern agriculture is unsustainable and needs fundamental reform. We should start the debate immediately on how to accomplish this reform and put agriculture on a sustainable footing.

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[5] Livestock-generated methane is a major contributor to global climate change, partly because methane itself is more than 30 times more potent as a greenhouse gas than carbon dioxide. Therefore, a reversal of the globally increasing demand for meat would bring not only health benefits but also a reduction in greenhouse gas emissions of a potently dangerous kind. Livestock production has an important role to play in natural-systems agriculture—a point emphasized, in fact, by Wes Jackson and Wendell Berry in their ***New York Times*** column calling for a 50-Year Farm Bill—but the form and extent of such livestock operations would differ substantially from those that dominate the United States' livestock "industry" of today. The extent (that is, the volume of meat production) would be greatly reduced, reflecting a reduced demand for meat in human diets, and CAFOs (confined animal feedlot operations) would largely disappear because livestock would be integrated into farm operations more generally—as they were for thousands of years until quite recently.

[6] While I will not attempt to enumerate specifically what the contours of that research should be, or the financial and human resources that should be devoted to it, here are two examples of proposals that have been made in this regard. The first example comes from Wes Jackson and some of his colleagues at The Land Institute. It includes hiring and training more researchers to concentrate their efforts on developing perennial polycultures. A second example comes from the Missouri Botanical Garden, which is engaged in a massive global effort to document plant biodiversity on our planet, with the long-term goal of identifying wild, perennial, herbaceous species as promising candidates for pre-breeding and domestication so as to develop perennial foodcrops.