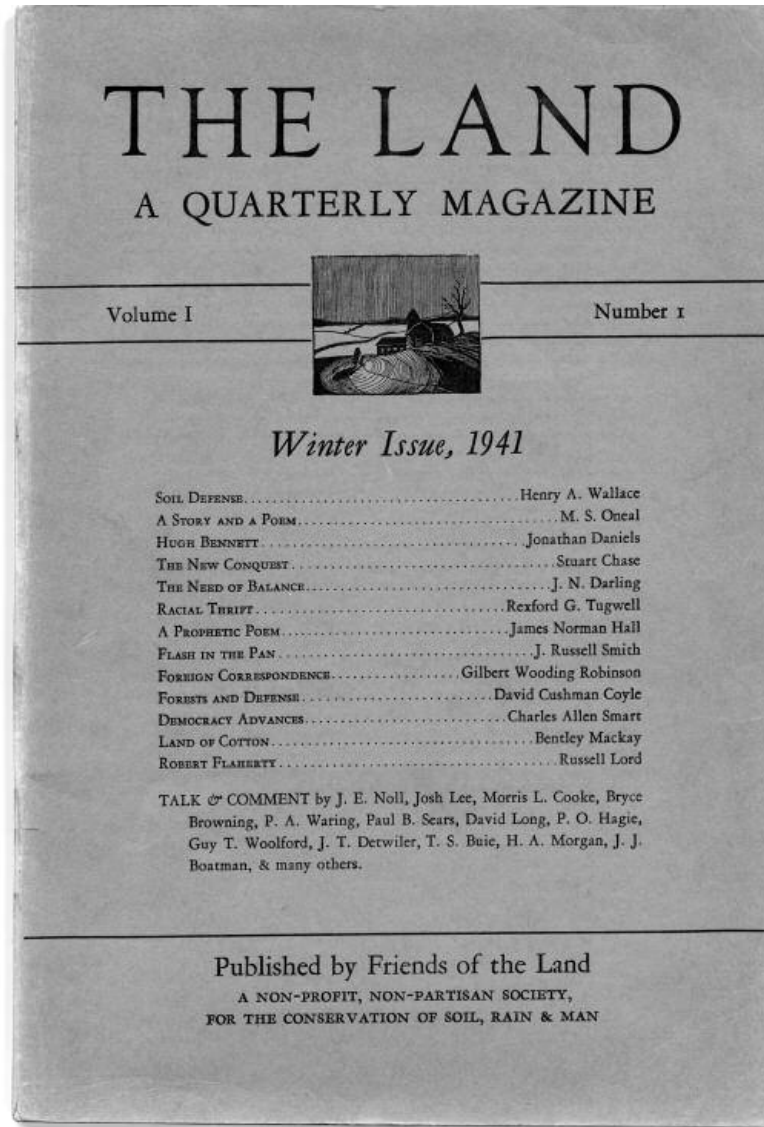


The Land Report

A publication of The Land Institute | Number 69 | Spring 2001



Friends of the Land
— Past, Present and Future

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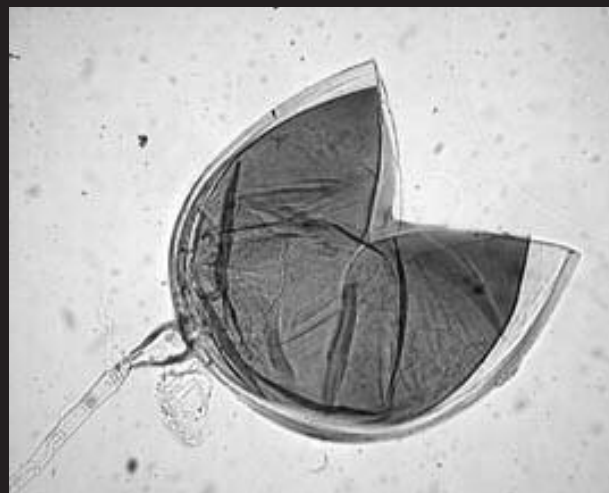
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Above: Christopher Picone.
*A spore of the mycorrhizal soil
fungus Scutellospora calospora,
from the The Land Institute. The
spore is about 300 microns and
spherical, but it has been
squashed on the microscope slide.
Mycorrhizal fungi like this one
help plants to take up nutrients,
and they improve soil structure.*

Back cover: Christopher Picone.
*Young wrens in The Land Institute's
workshop, 2000.*



Our Mission Statement

When people, land and community are as one, all three members prosper; when they relate not as members but as competing interests, all three are exploited. By consulting nature as the source and measure of that membership, The Land Institute seeks to develop an agriculture that will save soil from being lost or poisoned while promoting a community life at once prosperous and enduring.

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Friends of the Land — Past, Present and Future

Wes Jackson

The quotation that follows is not about the Friends of The Land associated with our organization. This older group disbanded some 15 years before we began in 1976.

On February 20, 1961, members of Friends of the Land became members of The Izaak Walton League of America. On that day, Friends of the Land, as a society, was formally dissolved and the Izaak Wilson League welcomed the responsibility of serving members of the society as members of the League.

This consolidation of Friends of the Land with others sharing a concern for the “conservation of soil, rain and man,” followed a decision of the society’s board that the interests of its members and of conservation could be served best by so doing.

The Izaak Walton League salutes Friends of the Land’s great contribution to conservation thinking and progress during its 21 years of productive history. The League warmly welcomes to its membership Friends of the Land who made that history. The League and those who led Friends of the Land believe that these new members will find in the League a continuing opportunity to serve America’s natural resources — its soil, woods, waters and wildlife.

Friends of the Land was founded to help bring to an increasingly urban population an understanding of man’s utter dependence upon the living soil and the miracle of water, and of man’s responsibilities to these fundamental life-giving resources.

The Izaak Walton League of America was founded on such a principle. Dr. Preston Bradley, dean of the League’s 54 founders, has called this the “moral imperative” of our time.

With this joint background of principle, this joining of interest and dedication has created what the late Hugh Bennett has called “— a new meaningful opportunity for progress in conservation understanding and achievement.”

— Alden J. Erskine, *National President,
The Izaak Walton League of America*

— Bryce C. Browning, *Co-founder and Director,
Friends of the Land*

Did Bryce Browning fight back tears as he signed this brave statement? The Friends of the Land had sunk so low it could no longer sustain itself. Twenty-one years earlier, on March 23, 1940, 60 leaders from many walks of life had met in Washington, D.C., to form this organization “devoted to the conservation of soil, rain and man.” Less than a year later, the first volume of their

quarterly journal appeared (see cover). Kate and Russell Lord devoted great energy to each issue. Louis Bromfield, a famous novelist and famous for his Malabar Farm, about which he wrote a book with the same title, was a pillar. So was Aldo Leopold, author of *A Sand County Almanac* (1949). Professor Paul Sears, already famous for *Deserts on the March* (1935), was a member. The founding chief of the Soil Conservation Service, the energetic and imaginative Hugh Hammond Bennett, was a main spark plug.

Knowing the historical reality and reading the words of those who were trying to put a positive spin on the merger, one has to ask, “Why did they have to merge?” William A. Riaski, in the May 1961 issue of *Outdoor America*, described how these friends once “sponsored and organized more than 100 national conferences and forums conducted in all parts of the country. They held annual clinics on watershed management, institutes on soil, food and health, country living, progress in conservation and tours of areas where conservation strode ahead.” They acquired Bromfield’s Malabar Farm to make it a living conservation museum. Once the ownership was relinquished to the Malabar Farm Foundation, they dedicated themselves to seeing that the farm would be continued in accordance with the objective Bromfield had initiated. Riaski’s sympathetic explanation of the dissolution follows:

The Friends of the Land board decided, in the Fall of 1959, that there were still too many conservation organizations in the field; that it would contribute more effectively to the conservation cause if Friends of the Land were to disband as an organization, throwing their weight behind a strong and vigorous group, such as the League.

Among my treasured possessions are the back issues of the group’s fine old publication. I own them because of a few gifts and two expensive purchases from two rare-book dealers. Oklahoma State has a set, and so does Yale. Kansas State had already rid that institution of its volumes when I checked 25 years ago.

What is the point of all of this? What are we to make of this history?

- Given that 38 percent of the soils of the *world* are in a degraded condition and that each issue of that journal had a section called “Other Lands,” should not the conversations have continued?
- It had poems written by farm wives — good poems, too. Where do they publish now?
- As mentioned earlier, it carried articles by Secretary of Agriculture Henry Wallace, a great defender of rural

Right: Ted Sidey. *Two Trees*,
Greenfield, Iowa, 1999.



America, a great defender of soil conservation. (His piece from the first issue appears again here.) Where does the secretary of agriculture submit articles to these days?

- What about those clinics, those institutes, those field tours?

I hope that *our* Friends of the Land know that we are carrying on some of the work that the defunct group featured. I was ignorant of the former organization until a few months after we began our operation nearly 25 years ago, not until a local farmer from whom we had purchased our first wind generator came by with several copies of the quarterly journal. Once I started reading, I couldn't quit until through them, and I immediately set out to learn where I might see the rest. That is when I discovered what universities still had them.

You might ask, "What did that now-defunct organization do wrong?" More than anything, I suspect, the times did it in. The seeming successes in agriculture during the '50s were the beginning of the problems facing us now. The fertilizer and pesticide industries were cranking up. Tractors had almost completely replaced draft animals on the farm, which also added to the cost of production, which in turn contributed to the exodus of people from the land to the cities, which turned food increasingly into a commodity rather than the staff of life, which in turn ... which in turn ... which in turn.

What about the future of The Land Institute and our Friends of The Land? Lucky for us, we have never been healthier, financially, with an annual budget now nearly \$1.2 million. We have a team of fine researchers and expect to add two more in the next fiscal year. Our fellows program will expand.

I think we will succeed because we have an organizing paradigm, nature as measure, featuring evolutionary biology and ecology behind our research agenda. Because of the broad research and development base we are building, the current leadership can effortlessly pass the torch. Our strong research and support staff will be there to see to it that the full spectrum of responsibilities gets met. We have no debt. We have about 12 months of cash reserves. We own 380 acres. We have a young and spirited staff. And for now, our stock is up. I am totally confident that those old Friends of the Land would be proud of us for building on their efforts, and that our efforts and those they inspired means that their efforts should not be read as a failure.

A *Land* Sampler and its Authors

Examples of writing from *The Land* quarterly's first year are featured in the next eight pages. Henry Wallace served as both vice president and secretary of agriculture in the Roosevelt administration. J.N. "Ding" Darling was a Pulitzer Prize-winning cartoonist for the *Des Moines Register*. Paul B. Sears authored several books, most notably *Deserts on the March* (1935). He served in several institutions of higher education, including the University of Oklahoma, Ohio State and Oberlin College, and founded the conservation program at Yale. P. Alston Waring was a farmer-subscriber to the journal, Morris L. Cooke president of the Friends of the Land, Jonathan Daniels an active member, and the Rev. Vincent J. Ryan a Catholic priest.

Soil Defense

Henry A. Wallace

The Land, Vol. 1, No. 1 (1941)

We need to defend our soil from those who, in heedlessness or ignorance, do it harm from within as well as from those who would seize upon it from without. We must formulate a new working philosophy of American land husbandry, one which emphasizes not only the security of the soil itself as our basic resource but the ultimate security of all who live on this soil now and for all the generations to come. Soil decadence, such as may now be seen on many once-powerful lands of this earth and over a depressingly large part of our own country, is almost inevitably followed by social and political decadence. We must guard and restore American soil as our great basic source of all production and as a place of permanent and settled abode.

When Columbus first saw the eastern fringes of this continent he found “the fields very green, and full of an infinity of fruits.” And gold, he wrote, was everywhere, in the streams, at the very roots of the trees. The same excitement, the same greed and wonder, amounting often to a natural intoxication, were expressed again and again by explorers and hunters, by woodsmen and herdsman, by trappers, speculators, and pioneer miners, merchants and farmers as the great white American soil rush swept West.

The excitement and the scrambling greed of our first conquest of this soil was expressed not only in words, in songs, in brags, but also in action. Our pioneers hacked, burned and skinned great stretches of a wide, rich and wondrous land. They hurt our country badly, here and there. But they did not have the power or the machines to punish great stretches of good earth as terribly as we modern farmers and developers did in the name of patriotism during the First World War.

It is useless to single out any one set of Americans — the farmers, the bankers, the land speculators, the agricultural teacher or scientist — and blame one group or all of them for what has happened. We have all had a hand in it. It becomes us all to approach with a certain humility the truly terrifying consequences and the changed pattern of farming and living now required. Soil despoliation, or damage to water sources, or the desecration of landscape by unsightly signs and structures, is not brought about by deliberate malice of social thugs. It is done with no thought of harm. We wound our country and threaten its future by thoughtless

actions which are in part a response to needs, but more particularly the product of an inherited way of thinking — or not thinking — about land.

We used to think that unless rills and gullies appeared on the face of the land, the soil was still there, with no serious damage from accelerated erosion. Early in the present century Hugh Bennett, then of our Bureau of Soils, showed that smooth land may become barren. He detected and described this “sheet erosion” all the way from Virginia to Oklahoma.

We thought in the past that even if good land fell off in yield it could rather quickly be made rich again with manures and commercial fertilizers. We know this is not true now — not when the “run-down” condition stems not simply from the removal of plant food by crops, but also from soil erosion. Erosion removes not only nitrogen, phosphorus, potash, and so on; it removes the living soil itself. Jay A. Bonsteel, now of our Soil Conservation Service, found this out and pointed it out before a Farmers’ Institute talk at Ithaca, New York, a quarter of a century ago. He had been looking at the ground on the uphill and downhill sides of old stone fences in that part of the country. “The soil from the higher-lying portions of the field,” he said, “has washed down and has become lodged against the upper side of the fence to the depth of a foot or more; the soil has been washed away from the lower side to the depth of several inches.

“The man is cultivating a soil totally different from the one which covered that field eighty years ago. ... Erosion (both by water and wind) is one of the agencies totally destroying the validity of the hypothesis of soil deterioration as a result of the removal and sale of crops. ... Wind alone, removing a thin layer, one-sixteenth of an inch thick, each year from the surface of tilled land would remove more mineral plant food per acre than would be taken away in a 35-bushel crop of oats or a ton and a quarter of hay.

“Isn’t it time to revise, somewhat, our preconceived notions with regard to plant food removal by cropping; to look at the wind and the waters as the active agencies causing soil deterioration? ...”

Bonsteel said this on November 4, 1904. We have somewhat revised our preconceptions since, but very slowly and incompletely. At a number of our agricultural

experiment stations long-term measurements of soil depletion under different methods of cropping have been made meaningless by accelerated erosion. Experimenters have gone on for years noting the pounds of nitrogen, phosphorus, and potash removed by crops, without regard for the fact that on bald knolls especially, and through the field in varying measure, the topsoil they were regarding as a fixed resource had literally run out on them. It is off in some other field now, or part of a river-bed, or buried in the sea.

By the dawn of this century soil deterioration was rather widely accepted as a fact. In Iowa and elsewhere men like Henry Wallace, my grandfather, and “Tama Jim” Wilson, and Seaman A. Knapp, cried out against “soil mining” and prescribed more careful and diversified farming as a stay against ruin. Their cure was, in general, right. In the light of all that we know now, the surest way to save soil is to get away from single-crop systems, and to farm with an eye to the natural lay of the land, along its contours, with the steeper lands kept under the binding cover of trees or grass. “The key,” said Dr. Thomas C. Chamberlin, before a Conference of Governors at the White House in 1908, “lies in due control of the water which falls on each acre. ... The highest crop values will usually be secured where the soil is made to absorb as much rainfall and snowfall as practicable. ... This gives a minimum of wash to foul the streams, to spread over the bottom lands, to choke the reservoirs, to waste the water power, and to bar up the navigable rivers. The solution of the problem ... essentially solves the whole train of problems running from farm to river and from crop production to navigation.”

The newborn Forest Service labored mightily to make the public erosion-conscious, and in some part the effort succeeded. But there was still little understanding of the subtler devastation wrought on open farmland by sheet erosion. This sort of erosion is rare in forests; most of the agitation was against a visible gashing and crumbling of denuded hills and mountainsides. It was not generally known at the time that even so-called “flat lands” with long, slight slopes, as on the plains and prairies, was also going out on us at an alarming rate.

Topsoil, then, is not immovable or static. It is a semi-fluid, forever moving, forever changing its form. The wind whips at the drier parts above and even in humid parts moves topsoil. Even more insistently and seriously the push of water drawn downward by gravitation keeps topsoil moving and changing. And once topsoil is drowned, in a stream or lake or river or in shoals under the sea, it is dead soil, lost to farming. For soil like man must breathe air and receive sunshine direct to stay alive and produce issue ashore.

In the uplands where floods ... teach a lesson by throwing across practically every foot of land under forest or natural grass cover an interlacing system of

tiny dams. A dead leaf, a blade of grass, or a root tangle can stop a raindrop from running, hold it back; and floods are made of raindrops, infinitely multiplied.

Wise land use is simply an adaptation of nature’s conservation and flood-control methods to the conditions of advanced cultivation. Instead of leaving fields smooth and bare, inviting erosion, the idea is rather to roughen the surface, turn the earth itself and the plants themselves into impediments to run-off, protectors of the soil. By the simple device of plowing and cultivating around the hill, on the contour, instead of up and down the hill, each furrow, each harrow scratch, becomes in effect a small dam or terrace. On steeper slopes somewhat more elaborate methods may be needed, but the principle of all of them is simple: To make running water walk, or creep, to store a far greater part of it in that greatness of all fresh-water reservoirs — the soil; and to do this by making the soil and its crops provide as impediments to run-off millions of natural little dams. Agriculture cannot offer a substitute for flood-water fortifications downstream; but it can offer a multitude of reinforcements upstream, where the raindrop falls upon the land.

A specialty, Huxley remarked years ago, should not be a door between the specialist and all the rest of life, but a window through which he may view the spectacle as a whole and grow in wisdom. To agriculturists — all of them, from soil physicists to anthropologists and field workers for Farm Security — this observation offers urgent challenge. Natural life outdoors is all of a part. So again, all of a part with outdoor processes is the more artificial life in cities. To cover the earth with cement, to strike the foundations of great stone or steel towers down to bedrock does not cut New York City or Chicago or Boston or San Francisco out of the natural cycle. The soil of great cities is mainly sealed from the weather. There is no soil erosion there; erosion takes other forms. And surely there is a connection between a lapse of faith and spirit in great metropolitan centers and torn, partly wasted lands outside. The torn land provides a diminished sustenance not only for the people who work it, but also for these millions who have removed and sealed themselves apart from and above bare, yielding earth. No less than the farmer the city man is living on soil and its products. And when the uncovered soil and its products diminish, the cities feel it too. An eroded soil leads to an eroded spirit all along the line.

Conservation is not something which can simply be ordered and paid for. Conservation is a way of life; people have to change their minds, their attitudes, their ways. “We must educate, we must educate” — so ran a sentence in *McGuffey’s Fifth Reader* — “or we perish in our own prosperity.” It takes time; and a first requirement is that the educator face changed conditions and change his own mind and ways. We must *think* in terms

of a living unity before our paper plans of coordinated organization can amount to much. By thinking in terms of “a living unity” I intend to suggest nothing mystical but only a foundation fact. Everything is made of our Mother, the Earth. Man is part of the living landscape, made of the same materials, molded by the same natural processes and laws. His body, his thoughts and his spirit are a product of that landscape, that sun, soil, wind and air. We are slowly learning to think in terms of a new science called ecology, in terms of inevitable relationships — to recognize that all things under the sun — the clouds, the rocks, the soil, the streams; and the people and the spirit of the people — are all of the same going concern.

It would sometimes seem that tobacco, corn and cotton, all plants that we took from the Indians when we took their continent, have taken a rather horrible revenge on us under our clean-culture, straight-line methods of tillage. There are not many parts of even so-called flat land which can be farmed on the square and the soil remain stable. Central Illinois has some such land; but even there it would be safer not to impose straight furrows upon it. Contour plowing and cultivation would be safer, both to prevent soil displacement and to make that soil absorb more water. And on straight-plowed cornland that looks equally level in southern Illinois, Arthur Mason discovered serious sheet erosion more than 20 years ago. From many places on fields not 50 years cultivated he found that half or more of an 18-inch topsoil had washed away. “Agricultural regions with cloudy streams,” Mason announced, “are, must be, temporary. Agricultural regions with clear streams are, must be, permanent. Is the United States a permanent country like North Europe? Is there any type of agriculture which will prevent or substantially retard this slow bleeding to death?” The answer, he felt, was to abandon clean-tilled corn culture altogether, mat the prairie with a solid sward of leguminous grass and feed that to livestock, dehydrated.

When at Versailles statesmen disputed; even as the great powers buried their dead, known and unknown; and American boys returned from the battlefields of France to resume civilian occupations, Mason issued a call for a new kind of warfare. “How cheerfully our young men went into a great war for posterity’s sake,” he cried, “how languidly they hear of this more terrible enemy, insidious, undramatic, draining the nation’s blood, the soil — the body of the soil itself, away to the sea!”

And speaking more quietly in a book, *The Holy Earth*, published as the First World War was raging, that great agriculturist and prophet of earth, Liberty Hyde Bailey, declared the wickedness of wounding land, and the awful consequences. “We come out of the earth,” said Dr. Bailey, “and we have a right to the use of the materials; and there is no danger of crass materialism if we recognize the original materials as divine. ... We are not to look for our permanent civilization to rest on any species of robber economy. ... One does not act rightly toward one’s fellows if one does not know how to act rightly toward the earth.”

Dr. Bailey made plain what we all know to be true, instinctively; that there is such a thing as the ethics of agriculture, and a morality of agricultural statesmanship; also, that in the First World War our record as farmers and statesmen was, on the whole, bad. It is both astonishing and humbling to look back now and consider how, with even as much as then we knew about accelerated erosion, we farmers and agricultural people consented to the plowup of unsuitable acreage, the deforestation and cropping of unsafe slopes, a general headlong over-cropping, both during the war and in the pumped-up boom days afterward. It was all done amid excitement and for the most part heedlessly. We skinned our land and piled the crops overseas. We reduced considerable areas thousands of miles from the battle lines to the appearance of battlefields, blasted and pitted; and what in the end did we have to show for it? Paper payments, and pretty soon most of the paper went bad.

We know better now and we have new equipment. We have machine equipment. It has helped tear soil down, but may also be turned, we see now, to the task of defense, to build soil up again. We have new human equipment, young people with trained minds and a new concept of serving the land and democracy. And we have new human organizations, new social implements afield.

It is not too much to say that many years from now, when the last one of us who remembers the World War of 1914-1918 is gone, sizable parts of our country, and the people there, will still be suffering in some measure from the wounds that war dealt American soil. Let us never make that mistake again. If we are looking for “a moral equivalent for war” this may be one of the basic common causes in which we all can join.

The Need of Balance

J. N. Darling

The Land, Vol. 1, No. 1 (1941)

We have already more conservation organizations than we have conservation. They have failed in the past because of general habit of bird specialists talking only to bird conservationists, forestry experts talking only to those who are tree conscious, soil technicians talking to those interested in land, and water conservationists, if any, talking in terms of hydraulic power and urban uses to people whose chief interest lies in exploitation of natural resources rather than balanced management.

There is still a great need for organization in the field of conservation. May Friends of the Land succeed, where the others have failed, in arousing an apathetic and self-satisfied nation to a realization of the tragic consequences which are certain to follow the continued debauchery and ignorant mismanagement of our continental resources.

No nation was ever more criminally wasteful and no people were ever more heedless of its consequences.

No subject is more vital to our national welfare than an intelligent and comprehensive national conservation policy. It is more important than the political bickerings

of either major party, for certain it is that the best of theories of government, sociology, and economics break down when natural resources are exhausted and pull the standards of living down with them.

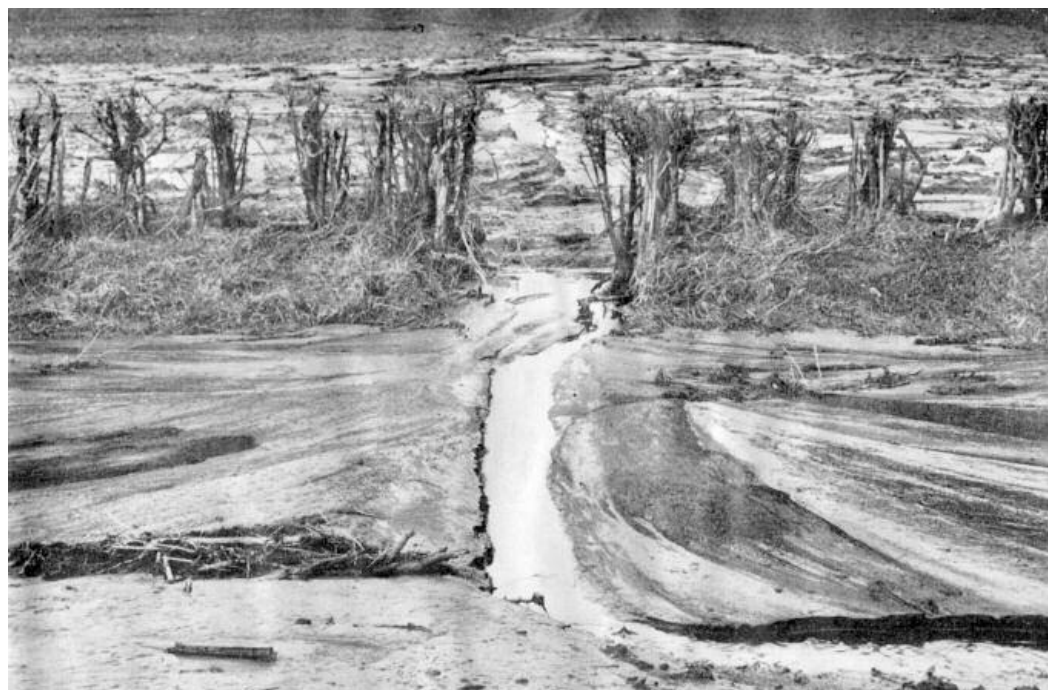
Europe is furnishing us a conspicuous object lesson in this most discouraging period of modern civilization when international covenants are worthless and the whole world has turned to international brigandry over the possession of sufficient *natural resources* to sustain their swollen populations.

We will be worse than stupid if in this country we do not take warning and intelligently conserve our own natural resources before the margin of our human distress gets too wide to handle.

“Grapes of Wrath” need not have been written if Friends of the Land had been successfully organized a hundred years ago and this nation had heeded its message.

I fervently hope for our success and will do all in my power to aid.

Sheet and gully erosion and silting in Illinois during the first half of the 20th century. From Soil Conservation.



Ohio Landscape, 1750 to Date

Paul B. Sears

The Land, Vol. 1, No. 2 (1941)

I have just finished a study of conservation in my own state of Ohio. This study will be buried in more or less elaborate if not recondite publication. But it has turned up some facts which seem to me quite interesting and important enough to be placed where they may do more good. I shall have to take our Editor at his word, and pass these facts along in the form of a brief personal communication, for I do not have time to organize and dress them in more pretentious fashion.

If we use the word *land* in its broadest meaning, it seems to me that the whole business of conservation can be boiled down to three factors: (a) land, (b) population, and (c) pattern of living. Since 1750 the land area of Ohio has not changed. New resources have come to light, for example, coal and oil. Many of the original resources have disappeared; others have been seriously impaired. Population has grown from about 10 thousand to about 7 million — that is, it has increased 700-fold. I like to get some idea of what this means by imagining the 6 dogs on our two city blocks increased to 4200 in the same area.

While these changes have been going on, the pattern of living in Ohio has changed from a simple economy of hunting, gardening and barter to a highly developed neotechnical and financial pattern of urban life. For each Indian there were about 2500 acres apiece; for each one of us today, there are fewer than 4 acres.

When Ohio was settled, it was over 90 per cent forest. Today there is not more than 17 per cent forest, which recent surveys show to be less than 50 per cent efficient. Ohio now consumes 10 times as much timber as she furnishes. In 1880 with perhaps a quarter of the state still forested, there were about 3000 factories, exclusive of sawmills, which were using wood as a raw material. By 1929 these factories decreased to 526. About 1880, a group of men from Cincinnati and Columbus tried to interest the state in a forestry policy. Instead of doing anything, the State voted a thousand dollars and forgot the matter for several decades. Had these men been listened to, 60-year-old logs in abundance would now be rolling to the mills. When I told a steel man the other day what this means in terms of raw materials for essential industries, he could hardly believe it.



With the help of Professor C. M. Finfrock of Western Reserve Law School, I have been able to go over all of the legislation of the State which has to do with conservation. Until 1850 the only concern of the lawmakers so far as trees were concerned was to prevent thieves from stealing valuable trees which did not belong to them. Between 1850 and 1900 there was no legislation of importance except the brief flurry soon after 1880, which included a petition to the Federal Government to reduce the duty on imported timber so our own factories could get it more cheaply. Since 1900, beginning with the establishment of Arbor Day, there has been a good deal of legislation, much of it more inspired by the Federal Government than by local initiative. We are not yet facing the problem in any serious or honest way.

Above: Paul Sears visits
Wes Jackson in 1977.

As the forest fell below a level of 25 per cent of the State's area, legislation on weeds, briars, pests, and plant diseases began to appear. This was indubitable evidence of a profoundly disturbed landscape. Even here the lawmakers lumped together all sorts of growth and required the farmer to "clean up" his line fences and highway boundaries. In doing so, of course, cover and food for game animals was destroyed on top of the destruction of forest. Frantically our sportsmen spend nearly a million dollars a year, much of it in the forlorn hope that our excellent Conservation Department can conjure game birds and animals back on to a landscape which will not support them.

Laws on wildlife have mushroomed since the days of the Civil War. Before that time they were mainly concerned with protecting the fur trade and killing off wolves. But since our forest area has dropped below 50 per cent, as it did just before the Civil War, every session of the Legislature sees some new and futile effort to legislate wildlife back to life. Wild pigeons were not protected until 1876, just a short time before the last great roost was blasted to pieces near Petosky, Michigan.

No less interesting is the legislation on water and fish. Previous to the Civil War, the main concern of the Legislature seemed to be drainage, but thirty years later than the first drainage law came the first of a flood of flood legislation, which has continued since. Just about a generation after that came laws looking toward the saving of water, and those laws are still going strong. The past half century has seen many laws on stream sanitation but the most of our rivers are still open sewers, muddy and flooded in spring, often dry and stinking in midsummer. As with wildlife, so with fish, each session of the Legislature since Civil War days has tried to make it possible by vote to bring fish back into streams robbed of their waters by drainage, unprotected by forest, and contaminated by increasing urban pollution. Yet we laugh at the incantations of the primitive shaman who, by his magic, is supposed to insure good hunting and fishing for his tribe.

All that I have said sounds like a gloomy picture. It would be possible to point out that since 1900 and especially since 1930 there has been an increase in organizations, in state parks and forests, in reservoirs, and in cooperation with the Federal Government. Ohio is by no means a backward state. It ranks high in wealth, literacy, and civic pride. But it is fair to say that it has done little more to date than make polite gestures in the direction of conservation. So far as soil is concerned, it does not yet have a real provision for organizing soil conservation districts. It has to be content with what soil conservation can be dragged in as individuals cooperate with the A.A.A. program. The southeastern part of the state has suffered heavily from soil erosion. Much of this area has been complacently written off as lost to

Notes from *The Land's* First Issue

Nobody expects as much excitement now over a gully as over a gun. Certainly conservation is not competing with preparedness. But it is time people began to realize that conservation is a part of preparedness. ... Once war is here we cannot stop to count the consequences of cutting down the pine trees — to weep for the washing of our hills into our rivers. But we can recognize that in any intelligent program of preparedness that our strength is still in our earth.

— Jonathan Daniels, in *The Nation*,
August 31, 1940

We are going to publish *The Land*, our magazine, as a quarterly review, supplemented by intervening news letters. ... We are going to work again, and work hard. ... We would be derelict in our duty if we did not, at any personal sacrifice, resume an active program. We ask your earnest support.

— Morris L. Cooke

The National Catholic Rural Life Conference is striving to restore rural living the dignity and respect which belongs to it. ... In almost every section of the Nation one observes progressive loss of ownership, and an emergent proletariat of farm laborers, share croppers, and even tenants. ... A blight has fallen upon the land which tends to destroy everything that is beautiful to behold. ... The farm provides the conditions for wholesome family life. The city on the other hand has become the graveyard of the family. ... To be a Christian or an agrarian is to believe that people can be induced to follow the course necessary to preserve our civilization.

— Most Rev. Vincent J. Ryan

agriculture by the happy farmers in the rich rolling agricultural area of central, northern, and western Ohio; but anyone who knows their country well sees that it too has suffered enormously by sheet erosion and will some day pay the penalty for its neglect.

I think these facts may be of interest to some of your readers, not as an indictment of my wonderful state, but as a reminder that even in the most prosperous and advanced parts of the country the damage has been far greater and the peril to the landscape remains more real than most of us are willing to concede.

Honey Hollow

P. Alston Waring, Pennsylvania

The Land, Vol. 1, No. 3 (1941)

Honey Hollow is a little watershed of the Delaware Valley. I farm one of its six adjacent farms.

We are only six men and we farm only about 900 acres all told, a very small effort to be sure. But I think we have discovered something as we have worked, which may be of general interest, and it is about this that I want to write to you rather than to relate how much run-off we have checked by our strip cropping or terraces or whether we have increased yield per acre by our changed methods. Quite frankly we don't know the answers to these things as yet. But we do know that by getting together, the six of us, and by thinking of our problem on a watershed basis we have made a real beginning on a conservation job which may in the long run bear some real results.

When we first saw the map of our watershed, which the Soil Conservation Service helped prepare, I think most of us were struck by the boundary line which cut off our farms from the surrounding countryside. It was a boundary line which we had never seen on any map of our township because, of course, it never had been drawn before. It was not just the boundary of two or more or even six of our farms. Here was a new area as far as our thinking about it was concerned, the area created by our stream. All the land within that boundary sloped into Honey Hollow Creek, and all of us who lived within it had something in common. Up to now our farms had been just six separate parcels of land. Now they were of a piece, belonging together. Here was a new thought, and it took a map to drive it home.

Naturally six men, accustomed to farming their own fields, did not suddenly jump into cooperative methods because of a map. But we did see that there was a relationship between our fields, created by the stream, and we began to see that this relationship meant that we ought to do certain things according to a plan, at least as far as erosion control work was concerned.

If you should come to visit us some day and walk up to the crest of the hill on my neighbor's farm you could look out over a hill-side and valley where most of the fields follow the contour of the land in alternating strips of fall and spring crops. There are two sets of terraces on our watershed, also, and we are developing some sod-ways which cut across boundary lines. We have only been at this about a season and a half, but already the plans on our maps are getting established on

the land and more conviction as to their rightness in our minds. Perhaps it will take three good years or even more before we get completely shifted over to this newer way of doing things, and then maybe we'll go on adjusting our rotations to different factors as we learn them. The thought, I believe, which we are gradually getting is that we are not just trying to hold moisture or even soil in order to get better yields. We are doing this, but we are also slowly building a permanent agriculture on our farms, an agriculture which, as far as the land is concerned, will be secure for us and for our children.

When some soil auger tests were made on our watershed we were right deeply impressed by the speed with which soil can move away and be lost and what this might mean for our security and the security of whoever might farm this land after us. We knew that this countryside had been farmed since it was opened up to agriculture in the early eighteenth century, and because farming generally in this part of our state has always been considered of high grade we suspected that little erosion had taken place during the years. We are dairy-men and poultrymen and general farmers, and we rotate crops and return manure and grow grass and do most of the things considered good farming practice. But our watershed test showed that more than half of our acreage had already suffered from 25 to 75 percent top soil loss. And when we looked it up we discovered that this corresponded with the figures for the whole state of Pennsylvania where around half of the rural land has from 25 to 75 percent loss of top soil. This was startling indeed, and I think the knowledge has spurred us on to more effort.

Of course, we had our worries about whether conservation methods, no matter how important or how effective, weren't just too disruptive of our old and well established ways of doing things. And we didn't want to get into anything which was going to cost a lot or into a method of farming our fields where our machinery would not work. We wondered about plowing and harvesting on the contour, we dreaded point rows in corn, we were told that our farms would get cut up into a lot of little patches, and that there were left small corners hard to get at which resulted in land lost to productive crops.

We went into soil conservation with a good deal of questioning and some reservations, but as time has gone

*Contour cultivation
and strip cropping
in Coryell County,
Texas, May 1938.
From Soil
Conservation.*



by we have learned that the change was not so disruptive as we had feared and that it is not more costly to farm on the contour than on square fields or that we can't use our same machinery. Perhaps if I tell you the story of my neighbor, Charlie, and his potato field, you will get some idea of the conviction we are getting that we are on the right track.

Last fall we were husking corn in adjoining fields and stopped to talk about this conservation we were beginning to practice. I asked him how he was liking it.

After a bit Charlie stopped husking and dumped a basket of corn in the wagon. "I like it," he said, and sounded more positive than I had expected. "I think it's real good."

Ordinarily this is about all Charlie would have said, but somehow he seemed full of his subject. While we husked together he went on. "You know that sloping field behind the house where I planted the potatoes this year? Well, I planted it on the contour, and I wasn't sure at all whether it was going to do any good or not. Along in June a gullywasher hit us, the only soaking rain we had all summer. I reckon you remember it?"

I remembered it all right. It was one of those rains you don't easily forget, drenching, with wind behind it.

"Well," said Charlie, "in the middle of that rain I had to see what was going on, I just had to. So I ran out of the house to look at my potatoes, and all those curved furrows between the spuds were standing in water, and

the water was clear! After a while the rain stopped, but the water kept standing in those furrows until it soaked in the ground. If you'd have walked out in that field as I did you'd have seen that there wasn't a wash in it, and not a plant covered."

"I'm just as sure as anything," Charlie added as I was leaving, "that that rain and those curved furrows made my potato crop. We didn't get any more good rains that summer and I figure there wouldn't have been a crop if the water had not been caught and held where it was."

Shortly after I heard that another one of our neighbors who does not live in our watershed had told Charlie that he couldn't afford to do conservation work because you wasted too much land in corners. Charlie's answer was: "I'd rather waste a few square feet of land not planted and make a good harvest than the other way around." Looking at Charlie's potatoes roll out this fall I should say there is no answer to that argument.

The men here in Honey Hollow are beginning to get a new idea about their farming. It seems to me they are beginning to develop a permanent agriculture. We might have a long way to go to really do all the things which would make our farming so sound and good and durable that our families could go on living here successfully and happily for many years to come. We might have much to do, but we know it now. We have the idea, and we are working on it.

An Exchange Over a Cultural Divide

Letters Between Scientist Louis Brown and Writer Wendell Berry

August 11, 2000
Washington, D.C.

Dear Professor Berry,

Thank you for your letter of 8 August, which I read with great interest. In many respects I think we have more regions of agreement than controversy. As is usual in these things, so much turns on the meanings and interpretations placed on words. I hope this reply does not cause you to regret having answered me, but certainly your one letter went beyond what courtesy required, and you certainly know how to dispose of troublesome letters.

First, let me take care of the simplest questions you raised. I am 71 and do not feel old in any way except the all-too evident signs of mental deterioration that seem to be the consequences of age. I do feel old when I encounter the prevailing culture, which seems by default to be that of the very young and which I avoid as much as possible. Unlike some of my friends, who see in it the end of civilization, etc., I do not get particularly worked up about it; indeed it rather amuses me, but it is not mine, so I feel old. It is definitely the culture of the many young people I know at work and it fits them. We get along well together, but in many respects it is similar to living in a foreign country in which one knows the language but is still a foreigner.

Your description of young scientists as “a group so highly privileged and paid” would certainly startle them. My generation had it much better than the young scientists of today, but still I was 40 years old before I had tangible assets equal to a month’s pay. My wife and I are now comfortably fixed, primarily the consequence of having had no children and living modestly without debts. When I got my appointment with Carnegie in 1961 it was on the basis of a meeting and a handshake. For the same postdoc position today — for which I would certainly not be selected — a committee examines about 100 applicants, picking the very good from the very good. Those accepted immediately begin hunting for the next job, one they desperately hope will lead to something with stability. In far too many cases they have the complications of a two-profession, even worse, a two-scientist marriage. It is much more of a buyer’s market than when I left graduate school in 1958

and wages reflect it. Our department now employs four technicians with Ph.D.s in science from good schools. The director paused long before allowing it, but they prefer that to the alternatives, which is some high-tech company in the suburbs. This is true for any work that really satisfies the soul. This was behind my statement that “they like their world and are not afraid of it.” Mine was much easier, but then I never went through school as a continual competition. What I would do today were I young, I do not know, but then I am not young and consequently do not see matters from a young point of view.

A second clarification. I find science more dependent on the industrial revolution than the reverse. The industrious mechanics who made that revolution were from an engineering culture that dated from classical times. Other parts of Western culture disintegrated during the Middle Ages but engineering continued to develop. Learning to work large amounts of iron with cookbook metallurgy finally allowed the mechanical revolution. I spent much of the last decade examining the history of radar and learned to my astonishment that science contributed very little other than the electronics that filled the engineers’ handbooks. Physicists are, unfortunately, willing to take the credit; that is even a main thesis in a chapter of a prize-winning book by Kevles entitled *The Physicists*. Radar grew directly out of the technology that had been developed for television and as such may be the only military technology that has risen out of a civilian one — it has also been of greater benefit to humanity than the civilian one from which it came.

By lumping science and technology together you are, of course, justified in the usual approach (I do so myself where the context calls for it), but the difference between your 4,000-year-old hunter-gathers along with my intelligent mechanics and engineers is that the science of the last 400 years has provided us with an unprecedented understanding of where we stand in the universe. And it is an understanding that has very much knocked the arrogance out of our species! Prior to that time the entire Western culture assumed without question that we were the kings of the universe. God had made us in His image (quote Mark Twain: “Now who do you suppose thought that up?”). That we were here to rule the lesser races was seldom questioned even a century ago. Two centuries ago slavery was rarely opposed; it had survived through all previous humanistic

teaching, which seldom even condemned it. A century before that the lowest stations in Europe had almost no rights. The human race has indeed become vastly more “humane” since the Renaissance, something not even suggested in any previous part of our history nor in any non-Western culture of importance. This has come about because science — as opposed to cookbook experience — has shown us our true place in the universe, and it is an insignificant one.

Your letter and book tell me of your affection for farming, of the love of a farmer for his land, plants and animals. There is satisfaction in doing such work. That is something I can completely understand, not with the agricultural part but with the satisfaction of doing an important piece of work well. (My father was a west Texas sheep rancher, who died when I was six, after which his sister ran the place and I spent summers there. I loved my father dearly but could never understand why he wanted to do that when he could have run an engine on the railroad. My aunt and I broke over my direction in life.) This destruction of time-honored work troubles me more than environmental worries, which have gripped a growing fraction of humanity and will force solutions. (I suspect you disagree.) Forty years ago my wife and I were passengers on freighters for a total of five weeks and saw the last vestige of one of the oldest and proudest professions of human existence. It is gone. Seamen are now industrial workers, having finally lost to electronics their proud abilities to find their way upon the waters. Ships have crews to make repairs and to satisfy insurance companies for fire dangers. What a change from just a century ago, when boys still ran away to sea. I gather the modern farmer has suffered almost as severely. Then there are the people who loved running their small, independent stores. And then there are ... The most important thing in life is to be able to look back over a day’s work and feel satisfied, and the modern world seems to offer fewer opportunities.

Yet I still prefer the industrial age. Many of my schoolmates had no shoes. The poor of my time would have envied the poor of today as being rather well off. In Washington we must import labor for low-paying jobs. Central America is well represented in the repair of our streets. I duck the question of the degree to which prosperity improves life, but keep the German saying in mind: “Money doesn’t make you happy but it calms your nerves.” That huge fractions of humanity live healthier, longer lives is a direct consequence of the technological revolution. My wife would no longer be with me, had it not been for modern surgery. My greatly missed father might have lived much longer had medicine been about 30 or 40 years more advanced.

It is not hard to find serious problems growing from the advances technology has had on our lives, but the problems can generally be traced to the great

wealth available to a previously non-existent middle class, a class that wants to buy, as if to satisfy cravings thwarted since the beginning of civilization. This craving imposes a terrific political and social demand that will not be stopped, at least not for a few generations, and the corporate world is only fulfilling it, not creating it as many would like to have it. Yet there is another side of the issue. It is becoming ever clearer that on reaching this station the relevant populations no longer expand. The great editorial horror of my youth was the population explosion caused by modern medicine. We now see the answer to that previously unsolvable problem: relieve people of the fear of being abandoned in old age, give them toys of civilization — especially the great polluter of all, the automobile — and they will not produce children by the dozen. Having replaced the older population control of disease and famine with middle-class existence, we are left with new problems with which we now occupy ourselves and which we are capable of solving, solutions that are probably unsuspected but which will not come by turning off science or invention, definitely not in biology and medicine. Of course, it will certainly make a world even less to the liking of Berry and Brown, but to repeat myself, that is why old men die.

Enough. Thanks again for your letter and your patience. I hope this finds you and your wife in good health and spirit.

Yours sincerely,
Louis Brown

January 11, 2001
Port Royal, Kentucky

Dear Professor Brown,

I have been so much involved with travel (6 weeks of it altogether) and with the effects of it since I received your letter of August 11, that I haven’t been able to free my mind to give you an answer. That doesn’t mean that I haven’t had your letter on my mind — I have thought about it many times — but only that I haven’t been able to *concentrate* my thoughts.

It seems to me that we are trying to speak to each other from two sides of a cultural division that is becoming more and more apparent to me. The division is not between scientists and artists, but rather between

those who see things from an urban-industrial point of view and those who see them from an agrarian point of view.

I am a country person and a member of a farming family. You are surprised that I see young scientists as privileged and well paid. But I see young and middle-aged farmers every day (I am the father of two) who are struggling to *survive*, and for whom success, as understood in the professions, is simply unthinkable. I know that young scientists face a tight job market in the academy, but a lot of them will go there, and a lot of them who don't go there will go into industry, and they will make plenty of money. A professor in the Wake Forest business school was here on Sunday and he told me that many of their graduates get a *starting* salary of \$60,000 or \$70,000 a year. A young person starting out as a farmer now would be lucky to make a third or fourth of that, and a large portion of the few who are left will give up or fail.

If, as you say and I willingly believe, science is more dependent on the industrial revolution than otherwise, I should think that in itself makes the scientific enterprise much more contingent and hypothetical than people like Edward Wilson believe. It is anyhow not clear to me how claims of absolute and comprehensive truth can be founded on the premises of the industrial revolution.

It is certainly true that we now have a better empirical or statistical idea of where we stand in the universe than Plato or Dante had, but I don't at all see that it has made us less arrogant. Hubris seems to me to be the characteristic sin of our age. The proof of this is that we keep making world-scale experiments, the results of which we can have no notion: with nuclear energy, with chemistry, with weapons of war, with genetic manipulation, with corporate economics, and so on. The least intimation of humility would suggest that we ought to be cautious and keep the scale of our work small; it would teach us to be fearful of our obviously great and increasing ability to do harm.

I am by no means a scholar, but the writings that I know don't support your claim that until 400 years ago "the entire Western culture assumed without question that we were the kings of the universe." You will not find support for that in the Gospels or in Dante or in Shakespeare or in Milton. (Mark Twain is simply not the ultimate authority here.) That we were made in the image of God does confer on us a high, though not the highest, standing among the creatures, but this was never understood as a grant of sovereignty to our wants and wishes, but rather as imposing on us the strictest moral constraints and obligations and as entailing the gravest spiritual dangers. The first writer (in my reading) to propose that we could or should be the

absolute masters of nature was Francis Bacon, a man of the Renaissance.

Though I wish I could, I can't see that Bacon and his scientific descendents have made us more humane. We have just survived the bloodiest, cruelest, most oppressive century in history, and our powers of warfare, technology, and commerce are now more heartless than ever. We *could*, if we wanted to, establish national academies to study the beliefs and methods of Gandhi and Martin Luther King, but our model man is still General Sherman, and our weapons now are chemical and nuclear and biological, which spare no creature, and for which industry has depended on science.

I agree with you about the threat implicit in the degradation of work, but I don't think that threat is separate from the degradation of the so-called environment. It is only good work that can take proper care of the land and its products, and make them last.

Modern improvements in medicine, like modern improvements in other things, are two-sided. New drugs and machines certainly have permitted good and dear and worthy lives to be salvaged. But it is also a fact that a lot of people are now living too long, as a visit to any nursing home will tell you. Longevity is not necessarily a good. To treat it as such, including lonely, hopeless sufferers in the statistical averages used to boast of our "increased life expectancy," is a cruel falsehood. My point, as before, is that nobody appears interested in the question of how much progress is net. Nobody is doing the subtraction.

The problem of population control was not "previously unsolvable." There is good evidence that people have had their ecological limits clearly in sight — as in the Himalayan countries — solved it successfully, and without recourse to the industrial devices of "birth control." One thing that has caused populations to explode is the belief that ecological limits can be surmounted by science, trade, industry, etc. Another excellent example of modern superstition.

Well, I don't want you to think I'm entirely glum. I'm not an optimist, but I'm not a pessimist either. I am hopeful. I can see that good and honorable and beautiful things are still in the world, and I take a considerable happiness in knowing them and in trying to help them survive.

Sincerely,
Wendell Berry

Going to Work

Wendell Berry

- I. To live, we must go to work.
- II. To work, we must work in a place.
- III. Work affects everything in the place where it is done: the nature of the place itself and what is naturally there, the local ecosystem and watershed, the local landscape and its productivity, the local human neighborhood, the local memory.
- IV. Much modern work is done in academic or professional or industrial or electronic enclosures. The work is thus enclosed in order to achieve a space of separation between the workers and the effects of their work. The enclosure permits the workers to think that they are working nowhere or anywhere — in their careers or specialties, perhaps, or in “cyberspace.”
- V. Nevertheless, their work will have a precise and practical influence, first on the place where it is being done, and then on every place where its products are used, on every place where its attitude toward its products is felt, on every place to which its by-products are carried.
- VI. There is, in short, no way to escape the problems of effect and influence.
- VII. The responsibility of the worker is to confront these problems and deal justly with them. How is this possible?
- VIII. It is possible only if the worker knows and accepts the reality of the context of the work. The problems of effect and influence are inescapable because, whether acknowledged or not, work always has a context. Work must “take place.” It takes place in a neighborhood and in a common wealth.
- IX. What, therefore, must we have in mind when we go to work? If we go to work with the aim of working well, we must have a lot in mind. We must be mind-full. What must we know? We can establish the curriculum by a series of questions:
- X. *Who are we?* That is, who are we as we approach the work in its inevitable place? Where are we from, and what did we learn there, and, if we have left, why did we leave? What have we learned, starting perhaps with the influences that surrounded us before birth? What have we learned in school? More important, what have we learned *out* of school? What knowledge have we mastered? What skills? What tools? What affections, loyalties, and allegiances have we formed? What do we bring to the work?

XI. *Where are we?* What is this place in which we are preparing to do our work? What has happened here in geologic time? What has happened here in human time? What is the nature, what is the *genius*, of this place? What, if we weren’t here, would nature be doing here? What will the nature of the place permit us to do here without exhausting either the place itself or the birthright of those who will arrive here later? What, even, might nature help us to do here? Under what conditions, imposed both by the genius of the place and the genius of our arts, might our work here be healthful and beautiful?

XII. What do we have, in this place and in ourselves, that is good? What do we need? What do we want? How much of the good that is here, that we now have, are we willing to give up in the effort to have further goods that we need, that we think we need, or that we want?

XIII. And so our curriculum of questions, revealing what we have in mind, brings us to the crisis of the modern world. Partly this crisis is a confusion between needs and wants. Partly it is a crisis of rationality.

XIV. The confusion between needs and wants is, of course, fundamental. And let us make no mistake here: This is an *educated* confusion. Modern education systems have pretty consciously encouraged young people to think of their wants as needs. And the schools have increasingly advertised education as a way of getting what one wants, so that now, by a fairly logical progression, universities are understood by politicians and university bureaucrats merely as servants of “the economy.” And by “the economy” they do not mean local households, livelihoods and landscapes, they mean the corporate economy. (If more and more of the powers that be think of education as merely the servant of the corporate economy, why should it be surprising that more and more of those same powers should think of the government as merely the servant of the corporate economy?)

XV. But the idea that schools can have everything to do with the corporate economy and nothing to do with the health of their local watersheds and ecosystems and communities is a falsehood that has now run its course. It is a falsehood and nothing else.

XVI. What actually *do* we need? We might say that, at a minimum, we need food, clothing, and shelter. And, if we are wise, we might hasten to add that we don’t want to live a minimal life; we would also count comfort, pleasure, health and beauty as necessities. And then,

with the realization that it may be possible by reducing our needs to reduce our humanity, we may want to say also that we will need to remember our history; we will need to preserve teachings and artifacts from the past; we will need leisure to study and contemplate these things; we will need towns or cities, places of economic and cultural exchange; we will need clean air to breathe, clean water to drink, wholesome food to eat, a healthful countryside, places in which we can know the natural world — and so on.

XVII. Well, now we see that in attempting to solve our problem we have run back into it. We have seen that in order to understand ourselves as fully human we have to define our necessities pretty broadly. How do we know when we have passed from needs to wants, from necessity to frivolity?

XVIII. That is an extremely difficult and troubling question, which is why it is also an extremely interesting question and one that we should not cease to ask. I can't answer it fully or confidently, but will only say in passing that our great modern error is the belief that we must invariably give up one thing in order to have another. It is possible, for instance, to find comfort, pleasure, and beauty in food, clothing, and shelter. It is possible to find pleasure and beauty and even "recreation" in work. It is possible to have farms that do not waste and poison the natural world. It is possible to have productive forests that are not treated as "crops." It is possible to have cities that are ecologically, economically, socially, culturally and architecturally continuous with their landscapes. It is not invariably necessary to *travel* from a need to its satisfaction, or from one satisfaction to another.

XIX. It is not invariably necessary to give up one good thing in order to have another. In our age of the world there is a kind of mind that is trying to be totally rational, which is in effect to say totally economic. This mind is now dominant. It is always telling us that the good things we have are really not as good as they seem, that they can seem good only to "backward people," and they certainly are not as good as the things we will have in the future, if only we will give up the things that seem good to us now. If a forest or a farm is destroyed to make a "housing development," and the "housing development" is then sacrificed to a factory or an airport, the rational mind wants us to believe that this course of changes is "progress," and it offers as proof the successive increases in the value or the profitability of the land. It shows us the "cost-benefit ratio." And here we arrive at the crisis of rationality. We have come to the point at which reason fails.

XX. Reason fails precisely in the inability of the cost-benefit ratio to include all the costs. We know that, however favorable may be the cost-benefit ratio, the progress

from forest or farm to any sort of "development" degrades or destroys the integrity of the local ecosystem and watershed, and we know that it causes human heart-break. This kind of accounting excludes all coherences except its own, and it excludes affection. The cost-benefit ratio is limited to what is handily quantifiable, namely money. The failure of reason comes to light in the recognition that things which cannot be quantified — the health of watersheds, the integrity of ecosystems, the wholeness of human hearts — ultimately affect the durability, availability and affordability of necessary quantities. To think of landscapes merely in terms of economic value will in the long run reduce their economic value, not to mention the availability of such necessities as timber and food, clean water and clean air.

XXI. The mind makes itself totally rational in an effort to become totally comfortable, but at the risk of eventually becoming totally uncomfortable. The cost of subordinating all value to economic value will eventually be economic failure.

XXII. We are well-acquainted with this mind of would-be total rationality, hellbent on quantification. And we are increasingly well-acquainted with its results in the ruin of culture and nature. And so the next in our curriculum of questions necessarily is this: Do we know of a different or better or saner kind of mind?

XXIII. I think we do. It is what I would call the affectionate or sympathetic mind. This mind is not irrational, but neither is it primarily rational. It is a mind less comfortable than the mind that aspires only to reason, and it is more difficult to define.

XXIV. It is defined, I think, in the parable of the lost sheep in the Gospels of Matthew and Luke, and in the Buddhist vow: "Sentient beings are numberless, I vow to save them." The mind given over to reason would lose no time in demonstrating mathematically that it "makes no sense" to leave ninety-nine sheep perhaps in danger while you go to look for only one that is lost. And surely it makes even less "sense" to vow to "save" all sentient beings.

XXV. Obviously, to assent to such teachings as these we must change our minds. We must give up some part of our allegiance to reason and to quantification, and we must accept as our lot in life a perhaps irreducible discomfort. We have given affection and sympathy a priority over rationality. We have consented to the proposition that at least a part of what we have now, the part we have been given, is good, and we have assumed the responsibility of preserving the good that we have. We have assented implicitly to God's approval of His work on Creation's seventh day.

XXVI. To change one's mind in this way is to change the way one works. This changed way of working is

new to us in our industrial age, but is old in the history of human making. And what is this way? How does this changed mind go about its work?

XXVII. Such a mind, I think, is no longer satisfied with the conventional standards of industrialism: profitability and utility. Needing a more authentic, more comprehensive criticism, it looks beyond those concerns, without necessarily giving them up. It tries to see the work and the product in context; it tries to derive its standards from that context. And once again it must proceed by way of questions: Is the worker diminished or in any other way abused by this work? What is the effect of the work upon the place, its ecosystem, its watershed, its atmosphere, its community? What is the effect of the product upon its user, and upon the place where it is used?

XXVIII. Work under the discipline of such questions might hope to give us, to name a few examples, forestry that would not destroy the forest, farming that would not destroy the land, houses that would be suited to their place in the landscape, products of all kinds that would neither exhaust their resources nor degrade their users.

XXIX. Obviously, there has come to be a radical disconnection between the arts and sciences and their ultimate context which is always the natural or the given world. Why should this be?

XXX. I venture to think that it is a problem of perception, most particularly and directly in the sciences. The scientific need for predictability or replicability forces perception into abstraction. The “test plot,” for example, is perceived, not as itself, but as a plot *representative* of all plots everywhere.

XXXI. Developers of technology, in somewhat the same way, are under commercial pressure for *general* applicability. The place where a new machine or chemical or technique is proved workable is assumed to be *representative* of all places where it might work.

XXXII. These processes in science and technology seem to be closely parallel in effect to the processes of centralization in economic and political power.

XXXIII. The result is that all landscapes, and the people and other creatures in them, are being manipulated for profit by people who can neither see them in their particularity nor care particularly about them.

XXXIV. The disciplines that are not directly involved in this manipulation nonetheless have consented to it. It is the problem of *all* the disciplines.

XXXV. It seems to me that the solution to this problem is not now foreseeable, but I believe it can come about only by widening the context of all intellectual work and of teaching — perhaps to the width of the local landscape.

XXXVI. To accept so wide a context, the disciplines would have to move away from strict or exclusive professionalism. This does not imply giving up professional competence or professional standards, which have their place, but professionalism as we now understand it has already shown itself to be inadequate to a wide context. To bring local landscapes within what Wes Jackson calls “the boundary of consideration,” professional people of all sorts will have to feel the emotions and take the risks of amateurism. They will have to get out of their fields, so to speak, and into the countryside and the city and the community, and they will have to be actuated by affection.

XXXVII. In the sciences, I think the acceptance of the local landscape as context will end the era of scientific heroism. No one scientist or one team of scientists or one science-exploiting corporation can expect to “save the world,” once the disciplines have accepted this context that is at once wide and local. The solutions then will have to be local, and there will have to be a myriad of them. The scientists, moreover, will have to suffer the responsibility of applying their knowledge at home, sharing the fate of the place where their knowledge is applied.

XXXVIII. Throughout these notes I have been assuming — as my reading and the work I have done have taught me to assume — that it is impossible for us humans to know in any complete or final way what we are doing.

XXXIX. Now I will explain this assumption in a different way, but one that leads to the same conclusion.

XL. Increasingly since the Renaissance, the building blocks of rational thought have been facts, pieces of data that can be proved or demonstrated or observed to be “true.” So great has been our confidence in facts, and in the empirical processes by which factuality is tested, that Thomas Jefferson, for example, could speak smugly of “our barbarous ancestors.”

XLI. The assumption seems to be that the pursuit of truth in our time, as never in the times before, has become completely scientific and rational, so that now we not only possess more facts every day than we ever possessed before, but have only to continue to fill in the gaps between facts by the empirical processes of our science until we will know the ultimate and entire truth.

XLII. I do not believe this. I think it is a kind of folly to assume that new knowledge is necessarily truer than old knowledge, or that empirical truth is truer than unempirical truth. But I also do not believe that factual truth is or ever can be sufficient truth, let alone ultimate truth.

XLIII. A fact, I assume, is not a thing, but is something known about a thing. The formula H_2O is a

fact about water, it is not water. A person who had never seen water could not recognize it, much less recognize ice or stream, from knowing the formula. Recognition would require knowledge of many more facts. Water is water because it is the absolute sum of all the facts about itself, and it would be itself whether or not humans knew all the facts.

XLIV. The only true representation of a thing, we can say, is the thing itself. This is true also of a person. It is true of a place. It is true of the world and all its creatures. The only true picture of Reality is Reality itself.

XLV. In order to work, in order to live, we humans necessarily make what we might call pictures of our world, of our places, of ourselves and one another. But these pictures are artifacts, human-made. And we can make them only by selection, choosing some things to put in the picture, and leaving out all the rest.

XLVI. From the standpoint of the person, place or thing itself, of Reality itself, it doesn't make any difference whether our pictures are factual or imagined, made by science or by art or by both. All of them literally are fictions — things made by humans, things never equal to the reality they are about and never assuredly even adequate to the reality they are about.

XLVII. Facts in isolation are false. The more isolated a fact or a set of facts is, the more false it is. A fact is true in the absolute sense only in association with *all* facts. This is why the departmentalization of knowledge in our universities is fundamentally wrong.

XLVIII. Because our pictures of realities, and of Reality, are invariably and inescapably incomplete, they are always to some degree false and misleading. If they become too selective, if they exclude too much (on the ground, for instance, of being “not factual”), if they are too biased, they become dangerous. They are constantly subject to correction — by new facts, of course, but also by experience, by intuition, and by faith.

XLIX. We may say, then, that our sciences and arts owe a certain courtesy to Reality, and that this courtesy can be enacted only by humility, reverence, propriety of scale and good workmanship.

This paper originated as a talk at The Prince's Foundation in London and will be appearing in a forthcoming volume Ecology — A Sacred Trust to be published by The Prince's Foundation.

From *An Epistle to Lord Burlington*

Alexander Pope (1688-1744)

To build, to plant,
 whatever you intend,
To rear the Column,
 Or the Arch to bend,
To swell the Terras,
 Or to sink the Grot;
In all, let *Nature* never be forgot.
Consult the *Genius*
 Of the *Place* in all,
that tells the Waters or
 To rise, or fall,
Or helps th' ambitious
 Hill the Heav'ns to scale,
Or scoops in circling
 Theatres the Vale,
Calls in the Country,
 Catches opening Glades,
Joins willing Woods,
 And varies Shades from Shades,
Now breaks, or now directs,
 Th' intending Lines;
Paints as you plant
 And as you work, *Designs*.

Man Carrying Bale

Harold Monro (1879-1932)

The tough hand closes gently on the load;
 Out of the mind a voice
Calls “Lift!” and the arms, remembering well
their work,
 Lengthen and pause for help.
Then a slow ripple flows along the body,
While all the muscles call to one another:
 “Lift!” and the bulging bale
 Floats like a butterfly in June.

So moved the earliest carrier of bales,
 And the same watchful sun
Glowed through his body feeding it with light.
 So will the last one move,
And halt, and dip his head, and lay his load
Down, and the muscles will relax and tremble ...
 Earth, you designed your man
Beautiful both in labor and repose.

Wes Jackson's Right Livelihood Award Acceptance Speech

Honor goes to all of those past and present who have brought The Land Institute to this moment: directors, researchers, support staff, students, and a far-flung regiment of private philanthropic foundations and grassroots supporters. Their contributions this past quarter-century represent a belief in the long-term necessity — and now the possibility — of solving the 10,000-year-old problem of agriculture. Their steadfastness protected our ideas long enough to demonstrate the promise of a new paradigm: a Natural Systems Agriculture.

Our hopeful message is now being more broadly sown. The message is that humanity can fashion an agriculture as sustainable as the nature we have destroyed, an agriculture that rewards the farmer and the landscape more than their external suppliers of inputs. An agriculture in which irreparable soil erosion ceases. An agriculture not dependent on fossil fuels or alien chemicals, an agriculture that honors the reality of the ecological mosaic as it honors the reality of the cultural mosaic of men and women in local habitats. Though it will be a long journey to reach this ideal, the agriculture of which I speak has this potential because it features nature's wisdom rather than human cleverness. Consequently, it is more resilient to human folly, more forgiving. To mimic nature means to feature perennial crops whose roots hold the life giving soil and to grow them in mixtures that mimic the vegetative structures of nature. That is the nature's wisdom side of the equation. The human cleverness side involves taking conventional annual crop species and breeding them to be transformed into perennials. With expanded commitment on the part of researchers and a modest amount of financial support, numerous prototypes of perennialized domestic grains could be available in the near future and ready for full blossom in the next half-century.

While we have a great possibility before us, the realities of our time are sobering. The last one percent of the history of agriculture, the twentieth century, gave humanity its largest increase in food production. That accomplishment is unlikely to recur. Most of the elasticity for yield increase has been absorbed. Moreover, it was a Faustian bargain: much of the gain in grain yield came at the cost of accelerated soil degradation by erosion, chemical contamination, and salinization. Fully 38 percent of the planet's agricultural soils are degraded now. In addition, the spread of industrial agriculture's brittle economies has dislodged thousands of traditional farmers and torn much of the social and cultural fabric standing behind production.

Population growth will end one day, voluntarily or otherwise. The first cries of the newborns who arrive that day will likely be heard in a very crowded world. We will want them fed every day, every week, every month, every year for

The Award

On December 8, Wes Jackson and three others accepted Right Livelihood Awards in Stockholm, Sweden. The prizes, worth about \$51,000 each, are presented annually in the Swedish Parliament "to honor and support those offering practical and exemplary answers to the most urgent challenges facing us today." They are often referred to as the "alternative Nobel Prize."

The idea came from Jakob von Uexkull, who sold his valuable postage stamps to provide the original endowment for a program that began in 1980. Alfred Nobel wanted to honor those whose work "brought the greatest benefit to humanity." Von Uexkull felt that the Nobel Prizes today ignore much work and knowledge vital for the future of humankind.

The Right Livelihood Foundation picked Jackson "for his single-minded commitment over more than two decades to developing an agriculture based on perennial crops that is both highly productive and truly ecologically sustainable." The foundation sent him to meet people at the European Union in Brussels, Belgium, and Strasbourg, France. He discussed agriculture with numerous parliament members, civil servants and activists, and he made a presentation to the EU's Agriculture Committee.

The Other Honorees

- Indonesian lawyer and human rights activist Munir, "for his courage and dedication in fighting for human rights and the civilian control of the military in the world's fifth most populous country."
- Ethiopian scientist Tewolde Gebre Egziabher, "for his exemplary role in representing the Like-Minded Group at the Biosafety negotiations in Cartagena and Montreal, and in achieving an outcome that stressed the importance of the conservation of biodiversity and the traditional rights of farmers and communities in developing countries to their genetic resources."
- Turkish environmentalist Birsal Lemke, "for her commitment over many years to protect her country from the devastation of cyanide-based gold mining, and for campaigning internationally for a ban on this disastrous technology."

the rest of their lives. They will want the same for their children and grandchildren. No one can foretell the time when the population growth curve will flatten, or under what circumstances, but we can be certain that the liquid fossil fuels will be severely reduced. Natural gas now serves as the feedstock for nitrogen fertilization, responsible for 40 percent of the current standing crop of humans. What natural soil fertility remains will be humanity's best friend. We must be forever mindful that any food production that degrades soils now will eventually take food from our descendants.

But there is hope. With the maturity of ecology and evolutionary biology, both disciplines are available to merge with agriculture and assist in truly sustainable food production. No other material or industrial process can entertain such a hope. If we don't get sustainability in agriculture first, sustainability will not happen. Soils are the key. It is clear that agricultural civilizations have depended on an abundance of soils. Without the soils that sustain agriculture there would have been no pyramids, no Parthenon, no temple of Solomon, no Teotihuacan, no Forbidden City, no Chartres — no New York City or San Francisco, no United States of America. And without the later subsidy of fossil fuels, in combination with our soils, the scientific revolution would have stalled. It seems likely that there would be no knowledge of DNA, no Einstein equations, no space age, no Hubble telescope, no knowledge of tectonic plates and

continental drift, no knowledge of geologic or cosmic time, no expansion of our knowledge of the scale of the universe or the inner recesses of the atom.

All of those accouterments of civilization have rested on soil, which is as much a non-renewable resource as oil.

We are the only species, in this part of the universe at least, that knows that we are made of stardust recycled through supernova. This awareness of our stellar origins should make us capable of absorbing the lessons of our planet's ecosystems and then applying those lessons to agriculture. The agriculture we seek will act like an ecosystem, feature material recycling and run on the contemporary sunlight of our star. By beginning to make agriculture sustainable we will have taken the first step forward for humanity to begin to measure progress by its independence from the extractive economy.

I end on a personal note: I began graduate studies in the late 1950s as a plant taxonomist. And so my oldest academic grandfather was that giant of Uppsala, the father of modern taxonomy, Carl von Linné. The man who gave us the binomial system of nomenclature also gave us our name: *Homo sapiens*. *Sapiens* means wise, sage, or knowing. Did the great Linnaeus get it right? That is up to us. It depends on whether we solve our oldest environmental problem — the problem of agriculture. If we don't, then a dark, uncertain future awaits us. But if we are lucky, and a little wise, we may yet live up to von Linné's generous flattery.



Above: David Brower, at far right, visited The Land Institute's Prairie Festival in 1979. The others pictured, from left, are Dana Jackson, Sister Jeanne McKenna, John Simpson, Charles Washburn, Hunter Sheldon (and Sparky), Amory Lovins, Wes Jackson, Kansas Gov. John Carlin and Sister Monica Schneider.



Right: Donella Meadows talks with Jack Ewel at the Land's Marriage of Ecology and Agriculture in 1989.

Environmental Leaders David Brower and Donella Meadows die

In recent months, two important figures in the so-called environmental movement died, David R. Brower and Donella Meadows.

Brower, longtime leader of the Sierra Club and founder of Friends of the Earth and Earth Island Institute, died of complications related to cancer Nov. 5, 2000, in Berkeley, Calif. He was 87.

Meadows, usually called Dana, co-authored *The Limits to Growth*, wrote the syndicated newspaper column *The Global Citizen* and helped create the environmental studies program at Dartmouth College, where she taught. Meadows, 59, died of spinal meningitis Feb. 20, 2001, in Hanover, N.H.

Both had visited The Land Institute and were strong supporters of our mission and our work. Brower was the keynote speaker at our first Prairie Festival in 1979. Meadows attended a 1989 conference hosted by The Land, Marriage of Ecology and Agriculture.



Looking Back and Forward

Invitation to The Land Institute's 25th Birthday Party

Prairie Festival 2001, to be held Sept. 29-30, will feature workshops, "warmups" and presentations by former interns. The program is not yet developed. The only certain outside speaker will be Gary Paul Nabhan, whose new book, *Coming Home to Eat: The Sensual Pleasures and Global Politics of Local Foods*, will have been released a week or two before.

Why did we move the date?

- The end of September should find us in less conflict with our research efforts around here and
- It is closer to the 25th anniversary of our beginnings. We started in late August and a fire destroyed our original building six weeks after we began.

We hope you will come and have a look at the phoenix that arose from those ashes.



Above: Interns at a hoe-down.

Right: Cindy Hurlbutt and Beth Gibans in the classroom in 1989.

Natural Systems Agriculture (NSA)

In November, we invited 11 prominent ecologists and agronomists to review and discuss The Land Institute's agroecology research agenda. Also in November, Senior Scientist Stan Cox met with some NSA Advisory Team members at the University of Georgia, and in December he met with a group at North Carolina State studying allelopathy, weed-inhibiting properties, in rye.

Plant Breeding and Genetic Research

We partially renovated the greenhouse. In bay two, six cool-season beds are up and running. Circulating water warms each bed, and new fans circulate heated air.

The key to any good breeding program is good parent material. Stan Cox communicated with about 30 researchers around the country to obtain seed and information on breeding and genetics of perennial grains. Between seed exchange with colleagues and searching our germ plasm collection, Stan assembled initial gene pools for wheat, rye, perennial grasses, sorghum and even a potentially perennial oat.

We planted a germ plasm nursery of 320 annual and perennial wheats, ryes and other cool-season grasses near the classroom. The entire nursery is replicated in the bottom ground across the river from where the annual polyculture was harvested.

We planted a plot with alternating strips of perennial rye and wheatgrass populations for selection.

Most of the wheat, rye, perennial grass and sorghum genotypes were sown in the winter greenhouse. These include perennial and exotic parents for vernalization, low temperature to hasten plant development. Weekly we sow annual and adapted parents so that flowering times overlap and they can be crossed with each other. One cold room is running as a vernalization chamber for winter cereals and grasses.

Staff and helpers converted the basement of the classroom into a laboratory. Its immediate uses will be for rescue and culture of hybrid embryos, chromosome doubling and mutagenesis. It is equipped with a chest cooler for breaking seed dormancy and vernalization, a laminar-flow hood for sterile embryo rescue, an autoclave and other instruments and glassware.

Ecology Research

Chris Picone's research is trying to assess the effects of soil disturbance, plant diversity and plant identity on mycorrhizal fungi. (See *The Land Report* No. 67, summer 2000.) To distinguish the effects of tillage from the effects

of having annuals or perennials, we established a long-term experiment of small, paired plots of tilled and untilled prairie soil. In each plot we will plant perennials and annuals to separate the effects of soil disturbance from plant habit. Once established, these plots will be a valuable resource for visiting researchers to study topics such as soil fungi, nematodes, carbon sequestration and root dynamics.

Chris has been writing a chapter, "Managing mycorrhizae for a sustainable agriculture in the tropics," for a book edited by John Vandermeer. Chris also published an article, "Diversity and abundance of arbuscular mycorrhizal fungi in tropical forest and pasture," in *Biotropica's* December issue, 32:734-750.

Sunshine Farm

Our project is entering its last field season this year, as planned in our 1991 feasibility study. This winter, while Sunshine Farm Director Marty Bender has been writing research reports, Operations Manager Steve Renich and contract farmer Charlie Melander have been sorting through Charlie's voluminous farm records for data needed in our energy analysis. It is complicated because Charlie farms 2,000 acres in Saline County as well as the Sunshine Farm. His farm includes many tasks that are not done on the Sunshine Farm but contribute to its operation — equipment maintenance and repair, for example. Hence, a part of the energy, materials and labor in some of the tasks on Charlie's farm should be charged in our energy accounting of the Sunshine Farm. As Charlie can attest, this requires far more detail than keeping financial records for a farm. He chuckles that we may end up knowing more about his farming operation than he does.

Rural Community Studies Program — Education

A one-day workshop called Entering the Web trained teachers, students and community members interested in creating a website for our schools and communities. Flinthills High School in Rosalia hosted our group, and Sara Marshall of Chanute High School presented seven hours of training in the latest software. Both Chase County and Flinthills districts have high interest in website projects, both as a publishing medium for students to present their place to the world and to boost opportunities for young people to make a living in rural places. This is a work in progress, so websites are not yet completed.

School Projects

Chase County District

Elementary school students and parents built a low limestone wall near the school's entrance. It borders the outdoor learning center, which features prairie plants. Other students studied butterflies — their life cycle and the plants that attract them. The elementary and middle school libraries have added more than 360 nonfiction books on the flora, fauna, soils, history and weather of the Great Plains. Many of the titles include computerized reading comprehension checks. The librarian reports that these new books don't spend much time on the shelf. Children love them.

Middle schoolers run the recycling trailer during its regular visits to town, sorting and boxing items that residents deliver. High schoolers have set up a greenhouse and will plunge into an early start for the second season of the Red Hot Prairie Peppers organic gardening project. Denise Uhlrich, who coordinates our work in this district, has spoken to several local civic groups about the work in the schools made possible through this Land Institute-sponsored grant.

Flinthills District

Science students completed fall soil preparation on the five-acre prairie restoration project adjacent to the high school. History projects to videotape community elders continued this fall. A greenhouse was also erected in this district. The district used part of its staff development time for a "computer smorgasbord" to bring teachers up to date on opportunities for long-distance learning.

Baldwin District

A foods course in the high school has been intensively revised to include farming, ranching, chemistry and food preparation. All sophomores take this course, meaning that two-thirds of the students in the high school will be exposed to this material by the end of the grant period. A large investment in the course now will allow it to become an ongoing part of the curriculum.

Marion Springs Elementary School has set up a small greenhouse where the students will soon start plants for two projects: a three sisters Indian garden of beans, squash and corn, plus wildflowers for their schoolyard environmental center. Seeds are compliments of The Land Institute.

Baldwin has set a goal to boost student participation in these projects to at least 50 percent this year. Bev Worster, our education director, has visited the schools often and given presentations during fall staff development days to lend support to their efforts.

Public Notices

Next Generation Leadership Program

Land Institute Plant Scientist David Van Tassel was accepted into the Next Generation Leadership Program

funded by the Rockefeller Foundation. He attended San Antonio and San Francisco workshops, and will go to South Africa in April.

Presentations

We made presentations that included the public, professors and students, and organization members around the country at Hastings Center, Monmouth College, Washington College, University of Kentucky, Vassar College and the Sustainable Farm Association of Minnesota. In Kansas, we made presentations at Bethany College, Cloud County Community College, the Scottish Rite of Salina Masons, Manhattan Unitarian Church, Washburn University, Kansas State University and the Kansas Regional Convention of Phi Theta Kappa.

Website

Please remember to check www.LandInstitute.org for our presentation schedule around the country. See Calendar. You'll also find information as it becomes available on the Prairie Festival, which will celebrate The Land Institute's 25th anniversary Sept. 29-30.

NSA grad fellows' abstracts describing their projects are now on our website.

A growing number of articles are available on our website. They can be found via menu item Article Archives on any page and then by clicking the Search button and entering keywords.

Writers, Photographers and Sources for This Issue

Wendell Berry is an essayist, novelist, poet and Friend of the Land.

Louis Brown is a physicist and staff member emeritus in the Department of Terrestrial Magnetism of the Carnegie Institution in Washington, D.C.

Christopher Picone is a Land Institute scientist.

Ted Sidey works at the Henry A. Wallace Country Life Center in Orient, Iowa, and is writing a book of short stories.

Soil Conservation was a booklet, produced about 1950, of articles that appeared in the *Monthly Review* of the Federal Reserve Bank of Kansas City.

For information about writers reprinted from *The Land* quarterly, see page 4.

Memorials

Lionel Basney
from Judy Bredeweg

Alfred R. Dreiling
from Pam DeNicola and Family

Mae Fredericks
from Paul, Jessica and Tyson
Neukirch

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from Barbara Jeane Hibbard

Dr. Charles Jenner
from Dr. Robert B. and
Marianne K. Smythe

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from Olive E. Meyer

Wilma and Charles Meyer
from Suzanne Meyer Mittenthal

Betty Olson
from Paul A. Olson

Andre Perrette
from J. Yannick Perrette

James S. Peterson
from Kerry M. Kramer and
Charles J. Santangelo

Larry Rice
from Paul and Marge Reaume

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from Janit London

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from Marcia and Michael Mayo

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from Dr. Edward H. Tenner

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from Louise O. Warner

Ashley Winston
from Matthew Wood

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from Frank and Jeanette
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from Laurie Tanenbaum

David Wheaton
from Kathleen Fisher

Fritz Zens
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	Saturday, May 27	
___ S1	From Forest to Sea*	Joan Lederman & Jesse Sedler
___ S2	Far Afield—How Landscapes Affect Our Lives*	Lucy Lippard
___ S3	Reclaiming The Commons: On Beyond Suburbia	Brian Donahue
___ S4	The Poetry of People and Place	William Kloefkorn
	Poetry Round Robin: Harley Elliott, Twyla Hansen, James Thomas Stevens, Patricia Traxler	
	Sunday, May 28	
___ SU1	Communicating Art with Nature as Measure*	Panel: Bob Sayre, Scott Jost, Katherine Kormendi
___ SU2	The Legacy of Landscape Photography	Merry Foresta
___ SU3	Down the Great Unknown	Don Worster
___ SU4	Landmarks Versus Monuments	Saralyn Hardy
___ SU5	The Need to be Versed in Country Things	Wes Jackson

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