

The Land Stewardship



Keeping the Land and People Together

Letter

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Allies in the Resistance Movement

Building a more resilient farming system starts with the kind of cross-pollination that occurs when farmers and land grant scientists get together on the land. (last in a series)

By Brian DeVore

What do organic grain farmers dream about? A selective blight that decimates only weeds? A crop that supplies its own fertilizer? In David Podoll's case, he has a fantasy with roots in a grass-like grain that his family began raising for turkey feed in 1948.

This proso millet has endured just

about everything nature can throw at a crop in southeast North Dakota, where Podoll farms. Too much rain. Too little rain. Hail. Canada thistle.

Through it all, yields have not declined and the quality of the millet grain has remained excellent, while the seed Podoll saves back for planting each year retains its original vigor. Meanwhile, the farmer has had to stop growing wheat or oats of any substantial amount, practically a sin in a state that is the nation's number one producer of hard red spring and durum wheat. An unusually wet series of growing seasons in Podoll's part of North Dakota has made controlling disease in wheat and oats difficult, even with the help of chemicals. Toss in the fact that Podoll is certified organic and can't use toxic sprays when problems crop up, and

producing a significant crop becomes almost impossible. Meanwhile, that proso millet soldiers on, cranking out grain as it has for over half a century.

On a recent summer morning, the farmer sat at his kitchen table, wondering what it was about this millet that made it so resistant to the ravages of time.

"What's so special about this grain?" Podoll asked. "Why can't we have a wheat that's that vigorous?"

The beginning of an answer to that question may lie on less than an acre of land within a few hundred feet of Podoll's kitchen. Across the driveway are dozens

Resistance, see page 13...



Guillermo Velasquez, a senior plot research technician at the University of Minnesota, checks on wheat plantings in a campus greenhouse. Some farmers are concerned that modern varieties of small grains are losing their natural resistance to disease, insects and weeds. (LSP photo)

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All inquiries pertaining to the content of the *Land Stewardship Letter* should be addressed to the editor, Brian DeVore, 4917 Nokomis Ave. S., Minneapolis, MN 55417; phone/fax: 612-729-6294; e-mail: bdevore@landstewardshipproject.org.

BOARD OF DIRECTORS

Charlotte Brooker, Jim Erkel,
Dan Guenther, Monica Kahout,
Sandy Olson-Loy,
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Sr. Mary Tacheny, Jim VanDerPol,
Bruce Vondracek

STAFF

Southeastern Minnesota

180 E. Main St., P.O. Box 130, Lewiston, MN
55952; phone: 507-523-3366; fax: 2729;
e-mail: lspse@landstewardshipproject.org
Karen Benson, Heidi Busse, Bobby King,
Karen Stettler, Caroline van Schaik

Twin Cities Area

2200 4th St., White Bear Lake, MN 55110;
phone: 651-653-0618; fax: 0589;
e-mail: lspwbl@landstewardshipproject.org
Louise Arbuckle, George Boody,
Brian DeVore, Cathy Eberhart,
Dana Jackson, Ray Kirsch,
Ron Rengel, David Van Eeckhout

Western Minnesota

103 W. Nichols, Montevideo, MN
56265; phone: 320-269-2105; fax: 2190;
e-mail: lspwest@landstewardshipproject.org
Amy Bacigalupo, Laura Borgendale,
Michele Skogrand, Cathy Twohig,
Terry VanDerPol

Policy Program

2919 42nd St. E., Minneapolis, MN 55406;
phone: 612-722-6377; fax: 6474;
e-mail: marks@landstewardshipproject.org
Mike McMahon, Mark Schultz,
Paul Sobocinski, Adam Warthesen

LSL Q & A

The machine revs out of control

EDITOR'S NOTE: This fall, University of Nebraska Press published *The Curse of American Agricultural Abundance: A Sustainable Solution*, by Willard Cochrane. Cochrane, a professor emeritus of agricultural economics at the University of Minnesota, writes about how conventional farm practices and government programs have left the farm economy in a shambles and the environment in a continuing state of degradation. He then lays out a proposal for a "sustainable farm program" that would be targeted at areas where "intensive cultivation practices are poisoning the land and water, as well as causing soil erosion." Some of the areas Cochrane thinks should be targeted include the Midwestern Corn Belt, the Central Valley of California and the Mississippi Delta. In his book, Cochrane advocates green payments to provide incentives for producers to adopt more sustainable farming methods. Commodity transition payments and loan deficiency payments would be eliminated under Cochrane's proposal, because he feels such subsidies only encourage the intensive production of a few row crops, like corn and soybeans. Cochrane makes it clear in his book that the major emphasis on producing commodities for the global market has been bad news for U.S. farmers, as well as for the land.

Such ideas aren't popular with the majority of Cochrane's fellow ag economists. But it is difficult to dismiss the professor's ideas when one considers his credentials. Cochrane has been a leading expert on agriculture and its problems since the 1940s. He served as an agricultural adviser to President John F. Kennedy and has been a consultant to foreign governments. He is the author of numerous books, including the groundbreaking *Farm Prices: Myth and Reality*. Over the years, Cochrane has often been heard to say that, "a professor who is not causing trouble is not doing his job." Indeed, over the years he has gained a reputation for challenging conventional wisdom with a sharp tongue and a sharp pen. He once wrote a letter to the author of a text on economic policy calling him a "nincompoop" when it came to agriculture.

Cochrane is as sharp, and sharp-tongued, as ever. He recently sat down to talk to *Land Stewardship Letter* editor Brian DeVore about the environmental and economic crisis that's plaguing American farming.

LSL: Your book starts out by reprinting papers you wrote in the 1950s talking about how this inelastic demand for food, coupled with increased farm production, was bad news for U.S. farmers.

Cochrane: The 1950s was the first decade in which we had so much technological development come to fruition on the farm. In the book *Farm Prices: Myth and Reality*, I distinguish between aggregate demand and demand for an individual commodity. The demand for an individual commodity won't be so inelastic, but aggregate demand for food in general is pretty inelastic. There's only so much food the human stomach can hold. As that inelastic demand for food meets the U.S. farmer's propensity to overproduce, the inevitable result is low farm prices.

Our farm economy is geared to exporting about 30 percent of our total production. If the world demand is strong, we'll export that 30 percent,

maybe 31 or 32 percent, at a good price. If that world demand is weak, we'll still export roughly 30 percent but it will be at a low price. In other words, we're going to keep exporting 30 percent plus or minus one or two percent. If that world demand is strong, all our prices for wheat for example will be good because that price of wheat is set in the world market. But if that world demand is weak, that price we receive for what we export will be weak, but so will the price here. There isn't a price in the export market and a price for here.

LSL: How much of this can we influence through policy or the market?

Cochrane: Since we're in a global market now it's certainly out of the control of any individual farmer, no matter how big. It remains difficult for a government, even of a nation as big as we are, to deal with these issues because

much of our demand is from overseas.

There are certain advantages to being in this global economy. The advantage is world demand is open to us. But the disadvantage is we have no control over that demand. If you are a producer of wheat on the Great Plains I would say you are totally exposed to these changes in demand that sometimes grow out of war, sometimes grow out of recessions, sometimes grow out of widespread climatic developments. So I'm arguing in this book that, at least in the Corn Belt, we place less emphasis on this world market and the export market and produce, for example, the kind of pork that consumers in urban areas want. Instead of just producing grain for the world market as your primary source of income, come together and produce products that we know have a fairly stable demand here in the United States.

LSL: So you don't think it's the U.S. farmer's responsibility to feed the world?

Cochrane: No, I don't think it's the U.S. farmer's responsibility to feed the world. People come back to me and say yeah but there are still 10 million people in central Africa that are starving. That's true, but they can't influence that price, that demand, they don't have any economic demand. They don't have a role in the world market. They're just 10 million people who are starving. The reason why people are starving in central Africa is because they're poor. If we're going to feed the starving people of central Africa, we're going to have to give them the food. If our government wants to give them the food, that's fine—and in famine situations I favor doing that. But I don't favor giving people in central Africa food year after year after year. What I favor—even though they'll never be as productive as a Corn Belt farmer—is to let them produce their own stuff.

I think these [Archer-Daniels-Midland] ads on Public Broadcasting about feeding the world are bullshit. I mean all ADM wants is for us to increase our production, and they know that the people they're talking about feeding don't have the money to buy it. All they want to do is get a handling charge for every bushel they handle. They're not going to pay for buying the product from the farmer and milling it and getting it to these starving people in the Congo. What they should also say is, we've got to be prepared not only to produce the stuff, but to give it to

poor people and that means society has to be prepared to pay for giving it to them.

LSL: You write a lot about sustainable agriculture in the book. That's something that's been dismissed by many ag economists as not competitive or viable. When in your career did you start taking sustainable agriculture seriously?

Well, I came very late to the idea. But what I've seen over the last 10 years, particularly in the Corn Belt, is all the land being turned into one big cornfield, and hogs being produced in factories and the pollution problem and the erosion problem. All



Willard Cochrane

of this began to crowd in on me in the last 10 years. I'm not a Luddite. But I want technological advances to be consistent with protecting our natural resources.

At the same time, the solution I had for many years for helping farm prices by controlling production no longer makes any sense in a global market. If we try to reduce corn production here in the United States, I think other areas like South Africa and Argentina and eastern Europe will rapidly expand production. So what policy can the government possibly come up with to assist the farmers with their economic problems, and to put an end to or slow down the propensity for farmers to destroy their productive capacity by intensive farming?

It seemed to me we don't turn the clock back in the sense of being Luddites, but we try to encourage through green payments and technical assistance farming that shows some sense of protecting the environment. I've seen several of these studies that showed me that if farmers could locate niche markets and produce for those markets, there's a chance they could make a go of it.

Now do I have any doubts, any reservations? Yeah, I do. My reservations about the soundness of this solution are twofold: I think to be a successful sustainable farmer you've got to be an exceedingly good manager. You can't just

go out and plant 50 acres here and 100 acres or 5,000 acres there and then go sit on your ass in Florida for the next six months. You got to be there watching everything all of the time. Moving your cattle around so that they don't overgraze one area, for example. So the management requirement may be beyond the capacity of many farmers. That's one of my reservations. That's why once again public Extension work will be important.

But even if the farmer wants to go to Florida and sit on his ass for half the year, even a successful Extension effort is not going to help him be a successful farmer. My grandfather, who farmed in southwest Iowa, was a very good farmer who watched everything that needed to be watched, whereas my Uncle Zene was a poor farmer because he preferred to play cards in town rather than watching his cows. I could see my grandfather being a successful, sustainable agriculture farmer. I can't see my Uncle Zene being one.

The other reservation I have is can these farmers producing niche products come together in cooperatives and hang together through all the buffeting they're going to take in the marketing system? It can be done but it ain't easy.

A respected ag economist who's been a friend for many, many years, said to me: "It won't work Will, it won't work." He believes it's too much of an uphill battle to get farmers to farm in a sustainable manner and to make a living marketing to niche markets. So I says, "All right, what have you got?" He said: "I don't have anything."

LSL: Part of the 2002 Farm Bill is the Conservation Security Program, which would reward farmers for producing real environmental benefits. What is your reaction to a program like that?

Of the little bit I know about it, I think it's a halting step in the right direction. Look, in my book I have outlined a vision of the way I think, the only way I can see that we can go. I don't see us moving in that direction in one fell swoop. But I think the Conservation Security Program is one good example of what I'm arguing for. I think we have to go that way to protect our resource base and to help farmers produce products that are in demand in our own local economy. □

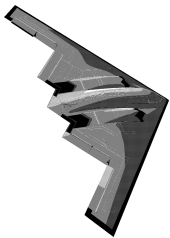
Information on The Curse of American Agricultural Abundance is available by calling 402-472-3581 or visiting www.nebraskapress.unl.edu.

The war to end all wars

EDITOR'S NOTE: In 2002, Island Press published *Fatal Harvest: The Tragedy of Industrial Agriculture*. This heavy book (it contains 396 pages) covers a heavy subject: the toll modern farming has taken on our land, society and economy. The book contains an essay by Ron Kroese, Land Stewardship Project's co-founder and a former board member. In his essay, "Industrial Agriculture's War Against Nature," Kroese outlines how our war-like society, war technology and the imagery of war have shaped the way we wrest a living from the land. Below are a few excerpts from this troubling essay. For more information on *Fatal Harvest*, check out the Nancy Adams review on page 20 of the January/February/March Land Stewardship Letter. More information is also available by visiting www.islandpress.org or calling 1-800-828-1302.

The battle for the farmer's attention

A stealth bomber appears to hover low over an endless corn field, a mysterious liquid spraying a fine mist from 24



nozzles on a boom dragging behind...Some top-secret photos from the Department of Defense or a scene from *The X-Files*? No, just one of the scores of agrochemical ads featuring themes of warfare, machismo, or mayhem that routinely

assault farmers from the pages of farm magazines. The barrage is especially heavy in the late winter, as farmers are planning next year's crops and the chemical companies unveil their new formulations and mixtures, each touted as more powerful yet safer than last year's concoctions. Each arrives with a snappy name and is released with a multimedia-marketing blitz as carefully researched and designed and as lavishly presented as a new car from GM or a new perfume from Calvin Klein.

While some products over the past decade have been marketed with names and ad copy that suggest environmental safety ("Harmony," "Accord," "Finesse," "Unite," "Asana"—this last, a Sanskrit word for yoga positions), most pesticides continue to be sold with logos and messages that convey power, dominance, and often violence. The overarching message they shout again and again at the farmer is that to succeed as a top producer you must do battle with nature and you are dependent on our pesticides to win that fight. The ad with the stealth bomber pulling the sprayer is selling American Cyanamid's herbicide Lightning. The ad's

caption reads, "You only have to strike once"—to the corn grower that translates: one spraying with this herbicide is all you need to kill most weeds for the entire growing season...

Beating swords into chemical plowshares

By 1944, articles were appearing in the popular farm press touting the revolutionary inventions developed for the war effort that would soon be coming home to the farm. The most promising (and ultimately the most notorious) of these products was DDT. Although chemists had known about the chemical's insecticidal qualities for decades, it was widely utilized in the war, to delouse soldiers and to kill malaria-bearing mosquitoes—saving, it should be noted, hundreds of thousands of soldiers from illness and death. Besides being lethal to insects, DDT had the further characteristics of not breaking down when exposed to the weather, thus remaining effective for a long time, and it did not appear to harm people.

By the war's end, DDT and other chlorinated hydrocarbon insecticides were widely available to farmers. These inexpensive new chemicals were widely



canals and reservoirs for irrigation. Field research continued in various parts of the country through the 1980s on the use of nitrogen-rich, low-level nuclear waste as a

fertilizer. Today, of course, food irradiation, using nuclear waste as the radiation source, is on the verge of being widely used as a solution to the bacterial contamination of meat from mechanized packing plants.

A peace pact

We consumers also have to be consistent and stop making war with the environment in our homes and gardens. About a fourth of the more than 2 billion pounds of pesticides that bombard the environment in the United States each year are used off the farm. In our lawns and gardens we need to get off the "weed and feed" battlewagon and accept a little diversity in our backyards. In our homes we need to switch to green cleaning products. There are now an estimated 12,200 farmers in the United States who have put their values on the economic line by going organic. They cannot put farming on the path of peace with nature by themselves. All of us who eat have to become conscientious objectors to the war against nature. □



What's on your mind?

Got an opinion? Comments? Criticisms? We like to print letters, commentaries, essays, poems, photos and illustrations related to issues we cover. We reserve the right to edit for length and clarity.

Contact: Brian DeVore, *Land Stewardship Letter*, 4917 Nokomis Ave. S., Minneapolis, MN 55417; phone: 612-729-6294; e-mail: bdevore@landstewardshipproject.org.

Let's keep the land & cows together

By Jim VanDerPol

As is so often the case in questions of agriculture policy, one-half or less of the problem is being addressed by any given expert, while connections are not made to other aspects of the same question. Evidently, the experts don't visit with each other all that much.

A recent issue of *Agri-News* quoted Harold Stanislawski, a livestock business adviser with the Minnesota Department of Agriculture, saying he opposed local government because it was getting in the way of livestock expansion. In that same issue of the newspaper, University of Minnesota soil scientist Gyles Randall talks at length about the mounting problems with soil erosion in southeast Minnesota. The fact that there are gullies in that area that can hide a pickup truck is directly related to the increase in soybean acreage, which is directly related to the collectivization of cows. When the small dairy farms sell the cows because the operator is tired of going it alone, the land is put to a corn-soybean rotation instead of the hay-pastures-corn-grain rotations, which most moderate-sized dairy farmers used. And the land erodes. Meanwhile, the cows raised in large-scale confinement operations get to eat a grain-based ration with minimal amounts of hay.

Now a reasonable person might figure that if the cows leaving the land leads to land abuse on a large scale, our public institutions would be clamoring for ways and means to keep cows and land together.

A reasonable person would be wrong.

It will be hard to get the attention of the state legislature, which cares about nothing besides cutting taxes. The Minnesota Department of Agriculture will be mostly in opposition, the commodity groups will be completely in opposition, and much of the University of Minnesota will display all the inertia of a mountain. (The shining exception to this university stagnation is at the West Central Research and Outreach Center in Morris, which is doing valuable research on soils, grass-based dairying and alternative swine production.)

Harold Stanislawski said in *Agri News* he is worried about the prospects for livestock in Chippewa County, because of the presence of the Land Stewardship Project office in Montevideo. I am not. As an LSP Board member I work with the

Farm Beginnings program, which again this year has nearly 20 want-to-be farmers in the western part of the state, with an equal number in the southeast, at least half of whom are interested in livestock. Where is the opportunity seen by all these bright young people? The opportunity is in markets represented by the same people conventional agriculture hates, those who don't like concentrated livestock next door if they live in the country and those that want to buy healthy food that tastes good. They are

tomorrow's market, and they can be served by systems built and controlled by farmers to the benefit of farmers.

What remains is for current livestock farmers—people my age—to quit talking as if quitting livestock were their life's goal. Instead we need to think about the kinds of agreements we need to work out so the next generation can start on our farms. Livestock can be ours to keep, if we will quit giving it away. □

Jim VanDerPol is a Chippewa County, Minn., livestock farmer.

Myth Buster Box

An ongoing series on ag myths & ways of deflating them

→ **Myth:** The only way to get started in dairy farming is by investing hundreds of thousands of dollars in high-cost, full-confinement systems. And even if you can get established as a low-cost, family-sized dairy operation, you're irrelevant in terms of your ability to contribute to the economic health of the local community.

→ **Fact:** An increasing number of farmers are getting started in dairying without taking on huge amounts of debt, and they are showing low-cost systems are profitable and can contribute needed economic vitality to a community.

The Land Stewardship Project's Farm Beginnings program is one of the best examples of how low-cost dairy systems such as management intensive rotational grazing (MIRG) can be viable for new farmers. MIRG, which produces milk by moving cows through a series of grass paddocks, allows farmers to make good use of a bovine's natural ability to harvest its own feed. MIRG dramatically reduces the need for expensive confinement buildings, liquid manure storage and handling facilities, as well as crop production resources. Such grass-based systems are also good for the environment since they spread manure efficiently and protect the soil with a perennial cover of grass.

MIRG can also make good use of land that's rough enough to be affordable to beginning farmers. A recent analysis shows that it's possible to enter a grass-based dairy business with as little as \$50,000 on as few as 40 acres. The study, which was conducted by Ag Connect out of Lenox, Iowa, developed economic case studies for dairy farms using rotational grazing systems in southern Iowa and northern Missouri between January 2001 and December 2002. Nine of the 10 families in the last year of the project were new to the dairy business since 1996. The average milking herd size was 60 cows, and the size of the farms ranged from 40 to 270 acres. In 2002, the 10 families participating generated a total gross income of \$942,596 from the sale of milk, which in turn was used to buy feed, services and building and production supplies from local businesses. Tim Ennis of Ag Connect estimates that new dairies similar to the ones that participated in the study are likely to generate more than \$110,000 gross income per year.

Farmers who adopt MIRG go through a steep learning curve the first couple of years, and these families were no exception. But because of its low start-up and production cost, MIRG helped these dairies get established with relatively few resources, concluded the study. These farmers had a particular advantage in that rotational grazing allowed them to make good economic use of hilly or otherwise "rough" land. Because it isn't considered prime for row cropping, this kind of land can be purchased at a lower price than normal, another plus for beginning farmers.

For more information on the "Grass-based dairy and dairy networks/promotions" study, call Ag Connect at 641-333-4656. The Leopold Center for Sustainable Agriculture, which funded the study, has a summary available on its Web site (go to www.leopold.iastate.edu/newsletter/Leoletterindex.html and check out the Summer 2003 issue of the *Leopold Letter*).



Dust-up over drugs

It's beginning to look like the drugs given to livestock are quite good at surviving a trip through the digestive tract. In Germany, scientists recently examined 20 years worth of dust samples from a swine finishing facility and found five different antibiotics, including tylosin, various tetracyclines, sulfamethazine and chloramphenicol.

There are already concerns that exposure to dust in swine confinement facilities is creating respiratory problems in farm workers. But these preliminary results, which were published in the Oct. 2003 issue of *Environmental Health Perspectives* (<http://ehpnet1.niehs.nih.gov/docs/2003/6288/abstract.html>) indicate that one more risk needs to be investigated: the effect of inhaling a cocktail of drugs along with that dust. The longer certain antibiotics hang around in the environment, the better chance they have of contributing to the development of superbugs that can't be killed with regular drugs.

For more information on the connection between factory farming and antibiotic-resistant bacteria, check out the pdf version of the Land Stewardship Project special report, "Antibiotics, Agriculture & Resistance" at www.landstewardshipproject.org/pdf/antibio_reprint.pdf. Paper copies of the 12-page report are \$5.00. For information on purchasing a paper copy, call Louise Arbuckle at 651-653-0618. □

Your tax money at work

The federal agricultural subsidy program is paying more money to fewer farms than ever before, according to an analysis conducted by the Environmental Working Group.

In 1995, the top 10 percent of recipients collected 55 percent of total subsidy payments, or \$3.98 billion. By 2002, the top 10 percent raked in 65 percent of total subsidies, a share worth \$7.8 billion. Over an eight-year period between 1995 and 2002, the largest 10 percent of recipients collected on average \$278,932 each year.

Half of all farmers who get subsidies receive only 2 percent of total payments. These farmers averaged \$256 per year in

subsidy payments from 1995 to 2002. About 80 percent of all payments went to crop and (to a much lesser extent) livestock farmers. Only 12.5 percent went to farmers and ranchers for conservation.

The Environmental Working Group concludes that these numbers show the need for farm policy that makes payments based more on what conservation benefits a farm can produce.

Go to www.ewg.org/farm for more information on the analysis, including a searchable database of who received how much in your home county. □

Consumers: We'll pay to help farms, but...

Consumers believe that U.S. farming should be protected from economic ups and downs, and that subsidies should be based on environmentally sound farming practices, rather than how much of a certain crop an operation produces. Consumers are also willing to pay more for food that's produced using methods that protect the environment.

Those are just a few of the results of a recent nationwide survey conducted for a major farm organization and one of the largest food companies in the world. On behalf of the American Farm Bureau Federation and Philip Morris, researchers from RoperASW asked 1,000 consumers to share their opinions of modern farming practices and how well farmers are meeting food supply needs. At the same time, 700 farmers and ranchers were asked about consumer expectations. The survey, which took place in August and September of 2002, was a follow-up to a similar poll conducted in 1999.

More than 80 percent of the consumers who took part in the survey think farming should somehow be protected from the economic roller coaster that often plagues agriculture. But these consumers want something for their tax dollar other than more bin-busting yields of corn and soybeans. Both farmers and consumers rated protection of water quality as a key environmental issue related to agriculture, and 65 percent of consumers said that subsidies should be based on environmentally sound farming practices.

Eighty-five percent of consumers said they personally would be willing to pay more for food produced using environ-

mentally sound methods, and 86 percent were either "very likely" or "somewhat likely" to switch to a company that was supplied by eco-friendly farms.

Consumers often say one thing and do another—would those surveyed really fork over more money for sustainably produced food when it came time to go to the supermarket? Another fly in the ointment is that 85 percent of consumers surveyed said they would prefer to have taxes cover the additional cost of producing environmentally sound food, rather than paying more at the cash register.

For more details on the survey, log onto www.fb.org/news/nr/nr2003/nr0120b.html. □

GMOs increase chemical use

The planting of 550 million acres of genetically engineered corn, soybeans and cotton in the United States since 1996 has increased pesticide use by about 50 million pounds, according to an analysis of USDA records.

The analysis, which was conducted by Charles Benbrook of the Northwest Science and Environmental Policy Center, calculates the difference between the average pounds of pesticides applied on acres planted to crops containing genetically modified organisms (GMO) compared to the pounds applied to otherwise similar conventional crops. In the first three years of commercial sales (1996-1998) of GMO crops, pesticide use was reduced by 25.4 million pounds. But from 2001 to 2003, over 73 million more pounds of pesticides were applied to genetically engineered acres when compared to non-GMO crop fields. Crops such as soybeans that are engineered to tolerate the spraying of weed killers accounted for the increased pesticide use. The other major category of genetically engineered crops, corn and cotton engineered to produce the natural pesticide *Bacillus thuringiensis* (Bt), continues to reduce pesticide use by 2 million to 2.5 million pounds annually.

Benbrook concludes that many farmers have had to spray incrementally more herbicides on GMO acres in order to keep up with shifts in weeds toward tougher-to-control species. In addition, certain weeds have developed a genetic resistance to the sprays, says Benbrook.

For a copy of "Impacts of Genetically Engineered Crops on Pesticide Use in the United States: The First Eight Years," log onto www.biotech-info.net/technicalpaper6.html. □

Beginning Farmer & Rancher Conference opens registration for March 27 event

LSP to sponsor 'Farm Beginnings Express' to Neb. Conference

On-line registration is now available for "The Beginning Farmer & Rancher Conference: Realities and Opportunities." The conference will be held Saturday, March 27, at the Holiday Inn and Convention Center in Kearney, Neb. The registration fee for this all-day conference is \$30, which includes lunch. More information and a registration form are available by visiting www.cfra.org/bfrc/default.htm. To register by telephone, contact the Center for Rural Affairs at 402-687-2100.

Beginning farmers and ranchers from Minnesota, Wisconsin, Iowa, Nebraska, North Dakota, South Dakota, Wyoming, Colorado, Kansas and Missouri will especially benefit from the conference, although the information provided will be applicable nationwide. And for those who work with beginners, the conference will provide an opportunity to meet people enthused about a career in farming or ranching.

Don Jonovic, a nationally recognized farm and business-planning specialist who writes frequently on the subject, will serve as keynote speaker, sharing his knowledge and vast experience working with generational farm transfer issues. Panels of beginning farmers and others will share real life experiences and challenges, and will talk about what to expect when starting a farm or ranch.

Concurrent workshops will be held on whole farm planning, estate planning, risk management insurance, alternative funding sources, sharing expenses and equipment, credit issues, marketing opportunities, legal issues, being a mentor, low input and low cost strategies, challenges facing women farmers, and more.

This conference is sponsored in partnership by the Land Stewardship Project, the Center for Rural Affairs, the University of Nebraska and USDA's Risk Management Agency.

Hop on board the Farm Beginnings Express

The "Farm Beginnings Express" will leave La Crosse, Wis., Friday, March 26, and travel across southern Minnesota and southeastern South Dakota, picking up people along the way who want to attend the Beginning Farmer & Rancher Conference. During this bus trip, riders will have an opportunity to hear about the experiences of local farmers. The fee for riding the bus is \$25 (\$20 for LSP members). For information on reserving a seat on the bus, contact Heidi Busse in LSP's southeast Minnesota office at 507-523-3366 or heidibusse@yahoo.com. □



We're looking for CSA farmers

In February, the Land Stewardship Project will be producing its annual *Twin Cities Area CSA Directory*. This is the eighth year of this popular publication, and copies are distributed via mail and the Internet. Many farms report back to us that the directory helps them recruit members while educating the general public about the Community Supported Agriculture (CSA) model.

If you are planning on operating a CSA farm in 2004 that will service the Twin Cities area, we invite you to be included in our 2004 directory. The listing fee is \$20 for members of the Land Stewardship Project, and \$30 for non-members. These fees go toward the costs of producing and mailing the directory, which is provided free to consumers.

If you are a consumer who is thinking about joining a CSA farm in 2004 and can't wait until February to learn more, you can download the 2003 directory now from

www.landstewardshipproject.org/foodfarm-main.html. For information on getting a paper copy, call Louise Arbuckle at 651-653-0618. □



Jeremy Lanctot (left to right), Kelly Lanctot, Jason Penner and Laura Penner brainstorm during a western Minnesota session of the Land Stewardship Project's Farm Beginnings program. See page 12 for more on Farm Beginnings. (photo by Laura Borgendale)



Bobino anniversary benefits LSP

Bobino Café and Wine Bar marked its 7th Anniversary Nov. 17 with a celebration of local food, local farmers and local chefs. Proceeds from the dinner that was served were donated to the Land Stewardship Project. The five-course meal was prepared through a collaboration of former and current chefs of Bobino's kitchen. The meal also celebrated the rich relationship the restaurant has had over the years with local farmers.

"Bobino, since the very beginning, has always been a small local restaurant whose chefs have utilized locally grown products from area farmers," says Pat Weber, chef/owner of Mojito restaurant and former chef at Bobino. "It was a pleasure to have all the former chefs back to do a dinner together for such a perfect cause."

The following donated their products for the event: Tim Fischer of Tim Fischer's Purebred Hog Farm in Waseca, Minn.; Jennifer Kampf of Red Cedar Farms in Byron, Minn.; Chad Foresberg of Footjoy Farms in Mound, Minn.; Steve and Susan Schwen of Earth and Path Farms in Oak Center, Minn.; Todd Lein,

coordinator of Southeast Minnesota Food Network of Dover Minn.; Alexis Bailey Vineyard, Hastings, Minn.; Captains Select Seafood, Minneapolis, and Grape Beginnings, Minneapolis.

The benefit dinner attracted over 100 people, filling the restaurant to capacity and raising \$2,000 for LSP. Bobino Café and Wine Bar is located at 222 East Hennepin Avenue in Minneapolis. For more information on Bobino, contact Pat Weber at 612-382-7316 or log onto www.bobino.com. □

Stewardship Art Gallery seeks entries

In 2004, the Land Stewardship Project will be opening an on-line art gallery at www.landstewardshipproject.org. This will provide a showcase for images that reflect efforts to foster and support stewardship of our food and farm system. We are asking our members to submit photos, illustrations or paintings for this Stewardship Gallery. The theme of our first gallery "show" will be "The Farm as Natural Habitat." The deadline for these first entries is March 1. Do you have art or photos that fit that theme? We'd love to see them. A Land Stewardship Project panel of judges will select some of the entries for display in our gallery.

The entries should:

- Reflect human interaction with land

and farms. The art or photos do not have to include people in them, but we are not interested in wilderness scenes.

→ For photos, candid shots work well, black and white or color are fine.

Entry guidelines

→ Please do not send originals.

→ Send entries as digitals or scanned files. If you are using pictures from your digital camera, they will work just fine if they are JPEG files. If you are scanning the images yourself from photographs or artwork, it is better to save them in either TIFF or EPS format. When scanning, use a 150 PPI ("pixels per inch") setting.

Send entries by March 1 to:

Brian DeVore, bdevore@landstewardshipproject.org. If you have questions, you can e-mail DeVore or call him at 612-729-6294. □

LSL back issues

Looking for a back issue of the *Land Stewardship Letter*? Check out www.landstewardshipproject.org/pdf/LSLbackissues.pdf for a pdf document that describes in detail every *LSL* published between 1983 and 2002. For more information on ordering back issues, call Louise Arbuckle at 651-653-0618. □

LSP develops energy policy statement

The Land Stewardship Project's Board of Directors periodically develops policy statements on various issues related to family farms, sustainable agriculture and rural communities. The Board's most recent policy statement is titled, "Renewable Energy from Farms: Building on the Principles of Sustainable Agriculture to Achieve Sustainable Energy."

To foster an ethic of stewardship for America's farmland, The Land Stewardship Project works for a food system that protects soil, water and wildlife resources, promotes fairness and economic opportunities for family-sized farms and rural communities, and provides safe and healthful food for all people. The Land Stewardship Project encourages farm management decisions that maximize energy flow from photosynthesis through farm enterprises in harmony with water and nutrient cycles of the land.

Renewable energy that involves farmers and rural landowners, either in direct production of energy on the land, as with wind turbines, or in the growing of crops to produce energy, or in the disposition of animal wastes from livestock, must be sustainable. An ethic of stewardship rejects extractive and dangerous forms of energy production that damage the environment and create inequity, violence and war among nations.

Therefore, the Land Stewardship Project supports

the following principles:

→ Conservation and energy efficiency should be the keystones of all U.S. energy policy.

→ Wind, solar and plant-based biomass should be given priority as sources of renewable energy through incentives for research and development.

→ Plant-based biomass systems for energy production should provide the environmental benefits of sustainable agriculture. Key considerations should be given to:

- the selection of appropriate plants, i.e., a diversity of native perennial and low maintenance species integrated into rotation systems,
- the siting of perennial biomass systems on highly erodible lands,
- protection of soil, water and biodiversity.

→ Animal-based biomass should be governed by the highest sustainable use principle, ensuring net environmental benefits and safeguarding animal, human and community health.

→ Development of farm-based, renewable energy systems should be locally controlled and address the economic needs of rural communities and family farmers.

Swine scientist: 'Wal-Mart effect' creates niches for family farmers

As large producers become bigger factors in the pork industry, farmers who raise hogs using alternative methods are finding niche markets opening up, said one of the nation's leading experts on sustainable swine production systems recently in Morris. Mark Honeyman, an Iowa State University animal scientist, spoke at the Land Stewardship Project's "Pig Power" meeting Nov. 20 at the University of Minnesota's West Central Research and Outreach Center (WCROC).

"As the market gets dominated by huge operations, it creates more niche markets on the back side," Honeyman told a group of 50 farmers. "I call it the Wal-Mart effect."

Iowa State and WCROC are doing trials on raising hogs in deep-straw, "open" systems. Such systems give swine more freedom of movement when compared to confinement barns, and utilize dry bedding rather than liquid manure to handle waste. The dry bedding makes these facilities less of a water quality threat. And because the hogs experience lower stress in deep straw facilities, farmers are often able to raise them using little or no antibiotics.

Such systems are popular with farmers because of their low cost, said Honeyman. Research at Iowa State and elsewhere shows that a deep straw polyvinyl "hoop house" can be built for about one-third to one-fourth the per pig cost of erecting a confinement barn.

Hoop pigs aren't as efficient at turning feed into pork, according to Honeyman's research. However, because of the lower fixed costs associated with hoops, raising pigs in deep straw is at least as cost effective as producing them in confinement. That's one reason there has been a tremendous growth in hoop barns.

"Four to five percent of Iowa pigs are finished in hoop barns," said Honeyman, adding that almost all that growth has happened in the last half-dozen years. "That is a phenomenal rate of adoption of

a new technology. Farmers like these hoop barns."

Farmers are particularly excited about such systems when they generate premium prices through niche markets. Niman Ranch, which markets pork raised without antibiotics in humane conditions, now buys hogs from approximately 300 farmers, including some in Minnesota. There are also certified organic and breed-specific niche markets such as the Berkshire program. In all, Honeyman estimated there are 35 to 40 niche markets active in Iowa.



WCROC swine scientist Lee Johnston described the experiment station's sustainable pork research to farmers who attended the Pig Power meeting on Nov. 20. (LSP photo)

"Of course, if the niche gets big enough, then the big guys grab it," he said. "But one thing the big guys can't replicate is the story that goes with the food. People want to know what they're eating. They want to know where it comes from. Farmers like you can provide that story."

The growth in niche markets is outstripping supply, said Honeyman. In particular, companies like Niman are having a hard time finding naturally raised pigs that were born in the winter. Iowa State has had good success recently farrowing pigs during the winter in modified greenhouses.

WCROC is also researching winter piglet production using deep straw systems. During the Pig Power meeting, station swine scientist Lee Johnston showed farmers an old confinement barn at WCROC that was recently modified into a deep-straw farrowing system.

In addition, WCROC is finishing pigs

in hoop houses. Johnston told the farmers that so far WCROC's research shows feed conversion efficiency in a hoop house is lower when compared to confinement. An initial feed trial this year that utilized alternatives to corn and soybeans such as oats, barley, buckwheat and field peas produced relatively lean pork in hoop barns. Johnston said if such alternative crops can be used consistently, then they can provide a ready source of straw that's needed for the bedding. That bedding, when mixed with manure, can serve as a valuable source of organic fertilizer.

WCROC soil scientist Neil

Hansen said his research shows that when applied at proper agronomic rates, hog manure consistently produces better quality soil than inorganic fertilizer. This can translate into less soil erosion and fewer water quality problems. While all manure has a positive impact on soil, manure from a straw based system could provide more erosion protection by adding residue to a field's surface.

"Manure has a very positive story to tell in terms of soil quality," said Hansen.

The research being done at WCROC shows how sustainable swine production can help independent family farmers while contributing to a healthy environment and vibrant local economies, said Terry VanDerPol, a farmer and LSP organizer.

"This type of research and demonstration benefits everyone, including livestock farmers. But it doesn't come about by accident—our land grant university system needs solid public funding for this type of research and demonstration." □

Pig Power II Jan. 27

The Land Stewardship Project will sponsor a special meeting on raising and marketing natural pork Jan. 27 at the Redwood Falls (Minn.) Community Center. One of the main focuses of the meeting will be maintaining hog herd health without antibiotics.

A veterinarian, a representative from Niman Ranch and a southern Minnesota hog farmer will give presentations and answer questions. For more information, contact Terry VanDerPol in our western Minnesota office at 320-269-2105 or tlvdp@landstewardshipproject.org.

Congress funds CSP; USDA releases rules

The Conservation Security Program (CSP) is inching closer to becoming a reality.

In late November, Congressional negotiators announced that they had agreed to provide \$41.4 million to CSP for the rest of the fiscal year. This was a dramatic turnaround from earlier this summer, when the U.S. House voted to eliminate funding for CSP in 2004.

"We applaud Congress for recognizing how much of a boost to our rural communities and the environment CSP can be," says Dave Serfling, a Preston, Minn., farmer and member of LSP's Federal Farm Policy Committee. "Their decision reaffirms the Congressional intent in passing the CSP in the 2002 Farm Bill."

And, on Dec. 17, after a lengthy delay, U.S. Secretary of Agriculture Ann Veneman announced she was releasing the proposed rules for the program.

Mark Schultz, LSP's Policy Program Director, says these are major victories for farmers and anyone concerned about the environment. LSP worked hard to get the public to inundate members of Congress and Veneman's office with telephone calls demanding that the CSP move forward.

"Getting this funding and finally having the draft rules are the result of people speaking their mind and letting Congress and the Bush Administration know that the foot-dragging on this program had to end," says Schultz. "Every one who called USDA in late November and December—you made the difference in getting this rule out from behind the closed doors of USDA. Now we need to fix the draft rules USDA has issued so they work for family farmers and the land."

CSP has been hailed by sustainable agriculture advocates and environmentalists as one of the 2002 Farm Bill's most innovative programs. CSP was designed by its authors to provide payments to farmers who are practicing good stewardship on their farms, and incentives for those who want to do more. These stewardship incentives encourage and reward farmers and ranchers for creating public benefits such as clean water, clean air, wildlife habitat, carbon sequestration, rangeland improvement, and wetland restoration and enhancements. Unlike the

Farm Bill's commodity programs, CSP payments are capped at a modest amount per farm per year, are fully compliant with "green box" requirements under international trade obligations, and are available to all types of farms in all regions of the country.

But the implementation of the CSP, which will be administered by the Natural Resources Conservation Service (NRCS), has been delayed by the Bush Administration since it was signed into law. The rules to implement the CSP have been stuck at USDA for more than a year and a half—10 months longer than the deadline established by the Farm Bill for final rules. In August 2003, the proposed rules were sent to the White House Office of Management and Budget (OMB) for review. The White House then held up the proposed rules for 90 days, the legal time limit for OMB to hold onto the rules before USDA could issue them for comment. As of Nov. 28, full authority to issue the rules returned to Secretary of Agriculture Ann Veneman.

Rule comment period begins

With the release of the proposed rules, the public now has until mid-February to comment on needed changes for the final draft. It is critical that farmers and nonfarmers alike contact USDA officials during the comment period and provide input as to how the CSP should be operated, says Serfling.

On Dec. 19, LSP's Federal Farm Policy Committee met to discuss their initial reactions to the proposed rules. Bill Gorman, a Goodhue County dairy farmer who belongs to the committee, says there are several concerns that need to be addressed. For one thing, the original legislation called for CSP to be made available to all farmers who applied and qualified for the program, but as it reads now funding will be capped and only farmers in certain counties or watersheds will be eligible.

"That's not the intent of the program," says Gorman. "It was supposed to make conservation payments available to a wide spectrum of farmers."

In addition, many farmers who have already achieved some of the environmental goals CSP is supposed to promote would be excluded, according to the

proposed rules. But Gorman says that in order for people to maintain these practices, it's important that CSP payments be provided. Finally, a lot of graziers have turned tillable land into pasture. The proposed rules would pay those graziers at a pastureland rate, not a tillable acres rate.

"That's just backwards," says Gorman. "Why should they get penalized just because they are grazing rather than raising corn or soybeans on that land?"

Dan Specht, a McGregor, Iowa, farmer who is also a member of LSP's Federal Farm Policy Committee, says positive environmental outcomes achieved by innovative producers should be a major objective of the CSP, rather than just funding specific practices with little emphasis on outcomes. At a minimum, farmers participating in the CSP should be required to bring soil erosion levels below the soil loss "toler-

CSP, see page 11...

Comment on CSP by mid-February

The Land Stewardship Project encourages its members to provide comments on how the CSP should be implemented. Comments must be sent in to the USDA by mid-February (60 days after the posting of the draft rule in the Federal Register, which was expected to happen after Christmas at the time of this writing).

LSP believes for the CSP to be effective, core principles need to be applied. CSP needs to:

- ✓ Improve environmental stewardship/conservation on America's working farm and ranch land.
- ✓ Deliver enough money and in such a way that it both rewards existing stewardship and provides an incentive for further changes in farming practices toward improved stewardship/sustainable farming.
- ✓ Be national in scope, covering all regions of the country and agricultural crops/products.
- ✓ Adhere to the strict payment limits that are in the law.

For more information about USDA's proposed rule and the comment period, call LSP at 612-722-6377, or visit our CSP Web page at www.landstewardshipproject.org/programs_csp.html.

ance” or “T” level (the amount of soil that can be lost while maintaining current production levels), he says. Compliance should be applied to all land eroding at greater than the tolerance level, not just so-called highly erodible land, he says. And as a way to use USDA programs efficiently, and to focus CSP funds on

outcomes rather than the installation of new practices, CSP cost-share funds should be used for the maintenance of current effective conservation practices and structures, Specht adds.

“We can’t let agribusiness write the rules so that this program turns out to be just another handout for large-scale commodity crop production. The core values of CSP as a program that rewards true conservation benefits must stay

intact. Only then will we get what we’re paying for.” □

*Check out updated information on CSP “resources of concern” at LSP’s CSP Web page: www.landstewardshipproject.org/programs_csp.html (scroll down to **Conservation Security Program Links & Resources**).*

Making your voice heard

The 2004 session of the Minnesota Legislature begins Feb. 2, and several hot sustainable agriculture/family farm issues will continue to be debated in Congress. Believe it or not, the voices of average citizens do make a difference.

“The main way to have your voice heard is by acting in concert with many other people — whether through in-person meetings, direct actions, lots of calls over a set period of time, a flood of faxes or postcards, etc.,” says Mark Schultz, the Land Stewardship Project’s Policy Program Director.

If LSP members are going to be at the Minnesota Capitol or in D.C. this session, they should contact LSP’s Policy Office at 612-722-6377 to get a quick update on policy priorities and to find out how they can best support them in legislative visits.

Schultz and the Minnesota Council of Nonprofits offer these tips on contacting lawmakers. These mostly apply to state legislators, but could also apply to members of Congress:

Personal meetings

- ◆ Make an appointment to see your legislator. If you don’t have an appointment, stop by the office and tell the staff you live in the district. Even on busy days lawmakers will make time for a conversation with a constituent.

- ◆ When meeting, keep it brief—five or 10 minutes. Introduce yourself as a constituent and thank the legislator for taking the time to meet.

- ◆ Group meetings — even small groups of 2 or 3 or 4 — are best, when possible. Individual meetings are great, too. Group meetings can last a little longer, normally, unless you are just stopping by on a busy day.

- ◆ This all works best as part of a coordinated campaign around a specific issue or set of issues. It is good for LSP members taking part in such a coordinated effort to tell legislators that they are members of the Land Stewardship Project. That, over time, builds the power and reputation of LSP, as more and more people educate their legislators about issues and about LSP’s perspective, says Schultz.

- ◆ State your purpose. Be clear about the legislation you are supporting or opposing. Mention it by bill number and topic. Focus on one topic per meeting. A fact sheet or documentation helps, but the briefer the better.

- ◆ If you don’t have the answer to the question, offer to get back the legislator on that topic and then do so.

- ◆ Ask for their vote and try to get a commitment at the meeting; let them know you plan to say in touch.

- ◆ Write a follow-up letter as soon as possible after the meeting.

Phone calls

- ◆ Many of the previous tips apply when telephoning.

- ◆ If you talk to an aide when telephoning, get their name so that you will have a contact for future reference.

- ◆ In terms of calling, it is important to ask the person who answers the phone to take a message, and to leave your name and contact information (so the legislator, governor, etc., or their staff can call you back, and so they know you are a constituent). It is better to have a person take the message than to leave a voice mail message.

Writing letters

- ◆ As with personal visits and telephone calls, be succinct, polite and to the point.

- ◆ Be as accurate as possible. Misleading information will hurt your credibility.

- ◆ Letters can be a good way to thank a legislator for voting your way. If they don’t vote your way, a letter can explain why you think a different decision should have been made.

Faxes

Faxes avoid the security concern of letters (in D.C.), and also are particularly good at getting attention when there are a lot of them.

The power of postcards

LSP member James Wellman has this bit of advice when contacting lawmakers: send postcards. He buys 3x5 stamped postcards from the post office and keeps them handy. He finds a postcard easier and quicker than a letter and feels he gets more responses that way (knowing the bill number is key when writing). “They are just the right size to cover one issue,” he says.

Wellman has also learned recently that it’s actually more efficient to send postcards to the state offices of U.S. Senators than to mail them directly to D.C. Staffers gather the correspondence regularly and ship them out through special channels. Letters and postcards that are sent directly by private citizens to Washington can be delayed because of security concerns, etc.

The local mailing address for Senator Norm Coleman is: 2550 University Avenue North 100 N, St. Paul, MN 55114-1098. For Senator Mark Dayton it is: BHW Federal Building, Suite 298, 1 Federal Drive, Fort Snelling, MN 55111.

For more information on contacting legislators, check out www.mncn.org/handouts.htm.



Strengthening community one quarter at a time

Farm Beginnings inspires a unique fund drive

By *Laura Borgendale*

What is at the heart of rural communities? Few people would deny that family farms and rural congregations are at the core. That is why the Southwestern Minnesota Synod of the Women of the Evangelical Lutheran Church in America's (WELCA) recent offering to the Land Stewardship Project's Farm Beginnings program seems so fitting. The women donated over \$12,000 to the revolving Livestock Loan fund, coordinated by Land Stewardship Project's Farm Beginnings program in collaboration with Heifer International. By collecting baby food jars full of quarters to donate to Farm Beginnings, the Women of the ELCA are contributing to the success of beginning farmers in their own area, thereby helping to ensure the survival of local farms, churches and communities.

Almost 280 churches were involved in the fund drive. During another fund drive last spring, the Lac qui Parle Conference of WELCA raised \$946.95 for Farm Beginnings—again in the form of baby food jars full of quarters.

Amy Bacigalupo, coordinator of Farm Beginnings for western Minnesota, had the opportunity to give a brief overview of the program to the entire WELCA Synod Assembly at its annual June



Don Struxness leads a Farm Beginnings class on soil monitoring during a recent field day at his Milan, Minn., beef operation. (photo by *Laura Borgendale*)

convention in Redwood Falls, Minn. Nathan Woodford, a Farm Beginnings participant, shared his experiences in planning a Community Supported Agriculture (CSA) farm and raising meat goats. Bacigalupo and Woodford also spoke at length about Farm Beginnings and the Livestock Loan Program in two half-hour breakout sessions.

Heifer International is traditionally known for its hunger relief missions in impoverished countries around the world. Operating under the belief that it is more effective to give people the means to produce their own sustenance and income instead of just handing out food, Heifer International uses its funds to buy animals such as cows, goats, chicken and sheep (along with many other species) and donates them to people in need. The only stipulation is that the recipients must pass-on an equal number of offspring to another family in need. This revolving payback cycle allows an even greater number of people to have access to income-generating animals (see October/November 2003 *Land Stewardship Letter*, page 9).

The animal pass-ons have been taking place all over the world, but recently Heifer International has expanded into the United States to address the declining number of small, sustainable family farms. Land Stewardship Project's Farm Beginnings program has become a pilot program for Heifer International's work in America. Heifer International established a revolving, no-interest Livestock Loan fund for graduates of the Farm Beginnings course. Participants are able to apply for dairy heifers, beef heifers and a bull, gilts and a boar, dairy goats and a buck, or ewe lambs and two yearling rams. They also may apply for 300 broiler chicks as a separate enterprise or as a complimen-

tary project to another enterprise. Recipients of the loan have two to five years to pay back the monetary amount equal to the number of animals they received, which goes back into the revolving loan fund.

Religious and community groups regularly work with Heifer International to help people in countries around the world have access to income-producing animals, changing lives by giving people



Members of the western Minnesota Farm Beginnings Class of 2003-2004. (photo by *Laura Borgendale*)

the means to support themselves and their families on an on-going basis. The Southwestern Minnesota Synod's WELCA group saw Heifer International as a worthy mission because many of the women "still have roots in the rural area," according to Marion McCrory, a member of the Southwestern Minnesota Board of WELCA. She explained that for the women who contributed to Farm Beginnings, "when it touches home, it touches the heartstrings." And most importantly, McCrory said, the women wanted to help beginning farmers succeed in their own rural communities because of one critical reason: "If our farms go, our rural churches go, along with our small cities and schools." □

Laura Borgendale grew up on her family's dairy farm in western Minnesota and is a graduate of the Farm Beginnings course. Borgendale is now a program assistant for Farm Beginnings, and she produces the quarterly Farm Beginnings publication Generational Glue, which features stories about generations working together in agriculture. If you have any stories about intergenerational connections, call Laura at 320-269-2105, or e-mail her at laurab@landstewardshipproject.org.

of neatly tended squares of spring wheat and oats. These are test plots, the result of a unique collaboration involving a group of farmers and scientists from North Dakota and Minnesota. The initiative is the first step in an attempt to breed back into small grains some of the natural hardiness farmers feel they've lost over the past several decades. But this initiative is also planting a seed of understanding between farmers and land grant researchers. The end result could be a public science infrastructure that's as resilient as David Podoll's proso millet.

Hothouse flowers

Farmers who produce organic wheat, oats and other small grains are often frustrated with the inability of modern varieties to compete with weeds and to resist diseases and pests. Before World War II and the advent of chemical agriculture, a tall wheat or oat plant that had lots of leaves was the norm. That kind of plant produced plenty of biomass in the form of straw, adding fertility back to the soil after harvest. And the leaves helped shade out weeds. But chemicals seemed to make this kind of plant architecture old-fashioned. The nutrients produced by the taller varieties could be replaced with petroleum-based fertilizer. Weeds could be sprayed, making shading unnecessary. Breeders began producing small grains that were shorter, so they could put more of their growth energy into producing grain. They were quite successful at it.

In recent years, questions have been raised as to whether this type of selective breeding is sustainable in the long run. The newer, higher yielding small grains are like thoroughbred racehorses: they have high output in the right conditions, but they require just the right balance of good weather, fertilizer and chemical applications. And these varieties tend to be bred to resist one disease; if a different ailment strikes it, an entire crop can be lost. In addition, farmers like Podoll complain that as research becomes more centralized, there are fewer varieties available that are adapted to particular regions and climates. Podoll is particularly mindful of that as he wrestles with the wet cycle that's been wracking his part of the state since the early 1990s.

"It's so easy to narrow the gene pool fast in the breeding process," says Podoll. "It's a much more complicated and extensive process to maintain diversity in

the breeding of cereal grains. This short wheat that's only been bred for resistance to scab, how do we know it's not going to get wiped out by some other disease this year? Or that it's going to be so short that farmers won't be able to harvest it under drought conditions? Breeding programs do not even think of that. You talk to some breeders about these things and they say, 'Oh, I didn't even know that was important to you.' They never, ever considered a plant's competitive ability with weeds. Automatically you spray, so it doesn't matter."

In recent years, the issue of developing



naturally resilient seedstock has taken on an even greater sense of urgency with the advent of crops that contain genetically modified organisms (GMOs). Genetically modified corn and soybeans have become common in the U.S., and wheat engineered to resist being killed by herbicides may be ready for the market as early as 2005, according to bioscience giant Monsanto. But the prospect of such a product has made North Dakota farmers—organic and conventional—break out in a cold sweat. Organic farmers are opposed to it because of concerns it will contaminate their seedstocks, making it almost impossible to raise a certified-organic product in the state (a grain containing genetically modified organisms cannot be certified organic).

For conventional farmers, opposition to GMO wheat comes down to concerns about the export economy. Europe has consistently opposed importation of products containing genetically modified organisms. If North Dakota's wheat gains a reputation as being tainted by GMOs, the state's farmers can kiss the European export market good-bye.

That's one reason two North Dakota experiment stations announced in 2002 that they would not be doing GMO nursery trials for wheat. And citizen advisory committees at all of the state's agricultural stations have been wrestling with the issue of how much and what kind of GMO small grains research should be conducted at the facilities. The

lower house of the North Dakota legislature even passed a moratorium on Roundup Ready wheat in 2001 (the state Senate converted the moratorium into a study).

Because of the contamination issue, it's become clear that if farmers do not take steps to develop their own seedstock, there will eventually be no organically certified or GMO-free grains.

However, funding for work to research and develop such a resource is hard to come by. Private companies such as Monsanto want to bankroll proprietary products that they can market to farmers, and research into organic seedstocks relies on the open trading of seeds between scientists, as well as among farmers. That means public institutions such as land grant universities have the responsibility to do this kind of research, says Podoll.

In this light, the Northern Plains Sustainable Agriculture Society set up the "Farm Breeding Club" to bring farmers together to share knowledge and seedstock for seed saving and breeding. The written mission statement of the initiative is clear and bold: "This project gives farmers the information that they need in order to start an alternative seed movement that is independent of the control of agribusiness."

The "Organic Variety Trials Project," an offshoot of the Farm Breeding Club, was launched in 2001. Working with Steve Zwinger, a research specialist in agronomy at North Dakota State University's research station in Carrington, and Pat Carr, an agronomist at a NDSU station in Dickinson, the farmers developed variety trials on two certified organic North Dakota farms: Podoll's and another one in the western part of the state. In addition, two Minnesota farms—one in the northeastern part of the state and the other in the southwest—are also growing organic test plots, with the involvement of University of Minnesota researchers Hans Kandel, Paul Porter and Deon Stuthman. In addition to wheat and oats, various lines of barley are being tested.

Conducting cropping trials on actual working farmers is nothing new to agricultural research. Researchers at both universities and private firms often establish test plots on farms. But this initiative is unique in how much it has focused on having farmers intimately involved with every aspect of the research—they aren't just passive

observers who are renting out a few acres for science. The Sustainable Agriculture Society surveyed its members and held meetings involving producers and scientists prior to the planting of the plots to determine what traits needed to be researched. Podoll and other farmers are maintaining the plots (they are paid for their time) and are even helping evaluate how the varieties are performing during field tours.

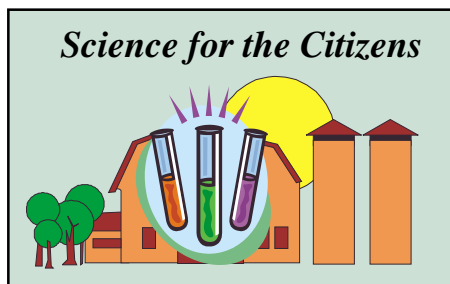
"The researchers didn't just go down the list and just choose the varieties with the high yielding traits," says Zwinger.

That's a huge departure from how experimental lines are usually chosen. As Stuthman, an oat breeder, says, "For many of us, yield would have been the first most important trait, the second most important trait and the third most important trait, and we go from there."

That's not to say the farmers didn't choose varieties with high yielding traits. But they also filled out the surveys and provided input with the bias of an organic producer that needs other traits to bring in a good crop—disease resistance, ability to produce biomass at harvest, all around good plant architecture, not to mention good baking and other food quality characteristics. One of the things farmers like Podoll were interested in was whether older small grains varieties would do better in an organic environment. Thus, a major part of the trials are plots devoted to "heritage" seeds—in this case varieties specifically selected from pre-1970.

With funding from groups such as the Organic Farming Research Foundation and Ben and Jerry's, as well as the state of North Dakota and the USDA's Sustainable Agriculture Research and Education program, the trials have been able to provide solid comparisons of how various small grains lines do in organic environments. By the time this funding winds down in 2004, three years of trial results will have been recorded, says Carr.

Podoll and other farmers involved with the project have been inspired by the work of Raoul Robinson, a plant scientist who has worked extensively to breed crops for resistance to pests and disease. In his 1996 book, *Return to Resistance: Breeding Crops to Reduce Pesticide Dependence*, Robinson outlined how "farmer breeding clubs" could help create



seed lines that would not just adhere to the commercial desires of agribusiness corporations. Robinson believes the key to developing truly resilient crops is to stop breeding for "vertical" resistance and start developing "horizontal" resistance. Vertical resistance involves breeding a plant that has specific traits that make it immune to the effects of a particular disease or pest. A plant that has horizontal resistance, on the other hand, will be equipped with a general tolerance for resisting the ravages of field life, but it's not completely immune to any one pest or disease. Vertically resistant plants do extremely well—often producing top



David Podoll (left) checks one of the test plots on his southeast North Dakota farm. "It's so easy to narrow the gene pool fast in the breeding process," he says. Researcher Steve Zwinger feels on-farm research can help land grant institutions better fulfill their mission to serve the public: "If researchers don't respond to the needs of the local farm community, they will become irrelevant." (LSP photos)

yields—as long as pests or disease do not find their way around their bred-in defenses. However, once those defenses are breached, they can collapse. The University of Minnesota's Stuthman says part of the problem with vertical resistance is that it is based on the assumption a strain of disease, pest or weed is genetically uniform. In fact, a grain disease like rust can have many variations within a species, and it's inevitable some of those variations will find ways around vertical resistance.

"That means the rust just needs to take one or two sidesteps and it's back in business," says Stuthman.

Horizontally resistant plants may have yields knocked back by a pest or disease, but in general are able to survive and produce a decent crop under adverse growing conditions. Plants with these kinds of traits are invaluable to organic farmers, since they know they can't turn to chemicals to bail their crops out of a tough situation.

So far the organic variety trials results have shown that certain varieties do better in organic environments year after year. However, Carr is quick to point out the limitations of the study. What the results won't show is what traits in these high yielding varieties are making them top producers. And without that information, it's next to impossible to do the kind of selective breeding needed to propagate a line of small grains that consistently do well under organic conditions.

"If you ask what traits you need in an organic system, I don't have any research to back or go against what's been said," says Carr. "The work we're doing right now can't answer those kinds of questions. We still have quite a ways to go."

Evolutionary, participatory research

But the research project has spawned solid results in the area of better farmer-scientist relations. Steve Zwinger, who grew up on a grain farm some 100 miles west of the Carrington experiment station where he works, is passionate about making sure a land grant institution like NDSU is serving the interests of farmers.

"If researchers don't respond to the needs of the local farm community, they will become irrelevant," says Zwinger, as he guides his pickup past the dozens of experimental plots he is

responsible for. But let's face it: it's a lot easier for the researcher to step out the back door of the station's headquarters and walk over to check on a variety trial than to drive 110 miles to Podoll's farm. But Zwinger is willing to make the drive. From a scientific point of view, the on-farm plots provide a sense of what it's like to raise grain on a real farm under specific

Resistance, see page 15...

climatic and agronomic conditions. Zwinger has also learned how to observe growing plants differently. Podoll, an avid gardener, has a reputation as a keen observer of the workings on his farm. When Zwinger goes through a plot on the farm, he writes down detailed notes on the height of plants, etc. Podoll is just as likely to note that, “boy this variety really emerged fast.” Zwinger says scientists tend to dismiss “qualitative” observations—after all scientific papers aren’t published based on such information. But he’s learned that they serve a purpose when it comes to making research applicable to the real world of farming.

“Do farmers read journals?” Zwinger asks rhetorically as he jumps out of the truck to check on a stand of lupin.

Podoll, for his part, says he has learned the value of taking careful notes and using numerical scores for reporting on the progress of growth. In his kitchen, he pulls out meticulously kept records to show his commitment to get down on paper what the scientists need. He also talks about how much he enjoys walking a plot with a researcher or another farmer, which can produce insights he wouldn’t have gotten on his own.

Paul Porter, an agronomist at the University of Minnesota, says on-farm trials can remove some of the control scientists need to do publishable research. For example, a farmer may be forced by economics or time constraints to do things to a plot that will affect the outcome of the research. Land can be sold from one year to the next, or a heavy dose of rotary hoeing—a key weed control tool for organic producers—can cause more plant damage than the scientists would like.

But both Porter and Carr say the uncertainties of on-farm research are worth putting up with. They feel true on-farm research—which has farmers participate in cultivation and other plot “treatments”—helps give the farmer-cooperator more ownership of the research.

“If you can pull it off, usually there’s a buy-in by the farmer-cooperators,” says Carr. “At the field days the farmers tend to migrate to the farmer-cooperators themselves instead of me, and I think that’s great.”

He says a typical tour where farmers come to the station to look at some plots may consist of 30 to 40 minutes of his explaining the research and 10 minutes of questions and answers. But at the organic

trial tours, “They can sometimes be three or four hours out there.”

Carr says that interaction means the results are going to be put to practical use more quickly. And yet, the organic farmers he’s worked with realize some overnight, silver-bullet solution is not going to come out of these plots.

“They think in terms of systems,” says Carr. “As an audience, the organic producers are pretty cognizant that this is long-term in nature.”

That systems approach to agriculture can sometimes make it back to the land grant institution itself. Stuthman, who has been involved in on-farm research since the early 1990s, says his involvement with this particular initiative has prompted him to look more closely at how to deal with a crop’s problem in terms of the biology and ecology of a system, and not just, “I’ll use an ounce of this, or an ounce of that.” For example, one of Stuthman’s on-campus oat nurseries consistently has weed problems, so he’s recently tried a plant breeder’s version of tough love. Instead of just spraying, the scientist is experimenting with interseeding winter rye with the oats. In theory the rye will suppress grassy weeds, while competing with the oats. This competition will select for oat plants that can hold their own with the rye. Perhaps in the future those few vigorous oats will make for a good line of seed. If the nursery had been sprayed, the weeds would have been controlled, but the oats that survived would be as susceptible to competition as ever.

Meanwhile, the oat breeder says he feels he and the other researchers have been able to pass onto the farmers a “dose of reality” about how difficult it can be to select varieties that will consistently produce good results.

“I’m inching toward where these

farmers would like to operate, and they are moving more in my direction,” he says. “As we converge, we will accomplish a lot. That’s what it’s all about.”

These trials have also had an impact beyond the Midwest. Stephen Jones, a winter wheat breeder at Washington State University, says he has long been interested in doing on-farm trials. This fall, inspired by a Northern Plains Sustainable Agriculture Society meeting he attended in January, Jones established plots of winter wheat on farms in Washington.

Jones calls this kind of on-farm science, “evolutionary, participatory research”—the evolutionary part of it is allowing natural selection to play a bigger role in developing new lines of grains, while the participatory nature of the research gets farmers involved.

Washington State is jump-starting the process by using its extensive greenhouse facilities to cross various wheat lines before sending the seed to farms. But farmer participation is still central to the research. A farmer’s 12-year-old granddaughter actually did her own crosses at the university’s greenhouse and planted the resulting seed this fall.

Back in North Dakota, Podoll knows from an agricultural science point of view, his plots are mere baby steps on the road to creating a wheat or oat that has the grit of his proso millet.

“Three year grants that expect short term results won’t cut it. This is a long-term process. We’re only beginning.”

But, he feels a little better knowing he and other like-minded farmers aren’t going on this agronomic journey completely alone: “Once you start looking into the university system, researchers interested in thinking outside the box come out of the woodwork.” □

On-farm research resources

The Northern Plains Sustainable Agriculture Society has posted the results of its on-farm organic seed trials at www.npsas.org. The organization has also developed resources related to small grains on-farm research:

◆ *Seeds for the Future: A Farmer-Researcher Dialogue on On-Farm Plant Breeding* is a 55-minute video featuring farmer David Podoll and researcher Steve Zwinger. The video includes ideas for farmers who want to select and save seeds on their own farms, and guidance for researchers working with farmers.

◆ A 24-page “On-Farm Research Guide” has been compiled by Sharon Rempel of the Garden Institute, with the help of the NPSAS. The guide provides the basics of establishing and managing on-farm research plots. It’s written with the small grains farmer in mind, but would be useful for anyone interested in doing research on a farm or in a garden.

For information on ordering these resources, contact NPSAS at: 9824 79th St. SE, Fullerton, ND 58441-9724; phone: 701-883-4304.

Bringing home the gold

By Ray Kirsch

“Green Gold” is the term reporter Joy Powell used in the Minneapolis *Star-Tribune* newspaper this summer. Sustainable and organic foods and farming are growing like never before and local farms are producing Green Gold. I like the ring of that. And so do Food Alliance certified farms here in the Upper Midwest. And not only farms—Food Alliance marketplace partners are also enjoying the gold of the natural foods boom.

Food Alliance’s Midwest regional affiliate, a collaboration of the Land Stewardship Project and Cooperative Development Services, is finishing up the year with 49 retail grocery partners, including Twin Cities natural food coop stores. Forty-nine opportunities for farmers and grocers to agree on promoting regional, environmentally friendly,



socially responsible foods. Additionally, Food Alliance is working with Sodexo to supply 11 regional colleges with local, certified foods. That's 11 opportunities for farmers and colleges to agree that students deserve healthy, local foods.

For 2004, we plan to expand this green gold ore into a gold rush—more food service opportunities, more retailers, more distributors, and possibly a new restaurant partner program. I encourage all farmers who feel they're missing out on this green gold rush to contact me to learn more about Food Alliance's Midwest program and to receive an application. You can also learn more at www.foodalliance.org.

And if your restaurant, grocery, college, distributor, or other food business is missing out on this rush, contact Midwest Marketing Coordinator, Jean Andreasen at 651-265-3682 or jean@foodalliance.org to become a Food Alliance Midwest marketplace partner.

Additionally, you can visit with me (and/or other Food Alliance staff) at

conferences this winter. We'll be at several, including:

- Wisconsin Fresh Fruit and Vegetable Conference
- Minnesota Organic and Grazing Conference
- Wisconsin Grazing Conference
- Upper Midwest Regional Fruit and Vegetable Growers Conference
- Upper Midwest Organic Farming Conference.

Please stop by and chat. Getting questions answered and paperwork out of the way in the winter can make the summer and fall greener and goldier. □

Ray Kirsch, the Midwest Certification Coordinator, is based in the Land Stewardship Project's Twin Cities office. He can be reached at 651-653-0618 or ray@foodalliance.org.

Annual meeting Feb. 12 in Bloomington

Food Alliance Midwest region will hold its third annual meeting Thursday, Feb. 12, at the Radisson Hotel South in Bloomington, Minn. The meeting is an opportunity for Food Alliance certified farmers, marketplace partners, collaborators and educators to share experiences from 2003 and plans for 2004. For more information, contact Ray Kirsch at 651-653-0618 or ray@foodalliance.org. More information is also available from Jean Andreasen at 651-265-3682 or jean@foodalliance.org.

LSP holds follow-up to farmer-chef dialogue

The Land Stewardship Project convened a dialogue between farmers and chefs at Lucia's Restaurant and Bar last March to strengthen direct market relationships and increase the amount of regionally produced on tables of Twin Cities restaurants (see April/May/June 2003 Land Stewardship Letter, page 12). At the close of that meeting, Chef Ken Goff, of the Dakota Jazz Bar and Restaurant, offered to host a follow-up conversation in the fall to "see how the summer growing season went," so LSP organized a second meeting.

Thirty farmers and restaurateurs gathered at the newly located Dakota in downtown Minneapolis on Nov. 20. LSP's Membership Coordinator, Cathy Eberhart, began the meeting by having farmers introduce themselves and tell what foods they raised for sale. In turn, chefs talked about what products they wished to buy for their restaurants. Then they talked about lessons learned over the summer. Some chefs had found farmers to be more aware of restaurant needs and were getting the orders filled earlier. Farmers saw that some restaurant menus had become more flexible as a result of understanding the availability of products and the farmers' limitations. Of course, problems still remain to be addressed in order to develop smooth sourcing and delivery.

Restaurateurs needing to streamline their sourcing of food thought it would help to have an on-line clearinghouse of information about what products were available and from whom. A central freezer storage for meat in the Twin Cities would make it easier for farmers to get meats to chefs when they want it. To enhance market security for growers, and simplify menu planning for chefs, growers and chefs were encouraged to get together in the winter before farmers ordered seed.

Many more ideas surfaced to improve business relationships. One that LSP will consider was the suggestion to convene more focused dialogues in the future around particular products, such as berries and fruits, summer vegetables, lamb and poultry or beef and pork.

For more information, contact LSP's Dana Jackson at 651-653-0618 or danaj@landstewardshipproject.org.

Analysis: U.S. to be a net food importer

By 2007, the U.S. will likely be shipping in more food than it exports, say two Purdue University economists in a recent analysis of trade figures.

This country hasn't been a net importer of food in almost 45 years, but since 1996 world demand for U.S. agricultural products has been sluggish. Such a trend is showing little sign of changing soon. For example, during the next year U.S. agricultural exports are projected to climb by \$500 million to \$56.5 billion. But at the same time, imports are estimated to jump as much as \$3.5 billion.

For more information, log onto www.agriculture.purdue.edu/aganswers/2003/09-19_US_Verge_Net.htm. □



Banking prairie

The Native Prairie Bank program allows Minnesota landowners to protect native prairie on their property through a conservation easement with the state Department of Natural Resources. The easements reward landowners financially for preserving prairie in its natural state. Certain agricultural practices are included in some easements, such as livestock grazing, mowing for hay or harvesting of native seed.

For more information on the Native Prairie Bank, call 218-739-7576, 612-331-0700 or 320-273-2191. More information is also available at www.dnr.state.mn.us/prairierestoration/prairiebank.html. □

Farmland available

Land Stewardship Project members Dave and Sue Roloff have land they would like to make available to someone interested in sustainable farming. The Roloffs are open to organic production, a Community Supported Agriculture (CSA) operation, tree farm, etc. The 57-acre farm is located outside of Turtle Lake, Wis., and is approximately 33 tillable acres. The owners prefer a long-term lease (it's not for sale) and want to provide land at a low cost. In turn, they would like the renters to honor and respect the land, animals and nature.

For information, call 651-430-2621 or e-mail goldenwhale@comcast.net. □

Conservation easements

A new publication on the basics of conservation easements has been developed. The 12-page guide provides information on such easements, which are used to prevent development of farmland, or to preserve scenic, historic or environmental values.

For a free copy of *Conservation Easements*, call ATTRA at 1-800-346-9140 or log onto www.attra.ncat.org. □

Foodservice & local foods

Approaching Foodservice Establishments with Locally Grown Products summarizes the initial findings of a survey of members of the Chefs Collaborative, a national network of more than 1,000 members of the food community who promote sustainably-produced cuisine. The survey found, among other things, that purchasing locally grown food products can be profitable for foodservice establishments.

For information on obtaining the 39-

page report, call 402-472-2832 or log onto www.foodmap.unl.edu/index.asp. □

Get hooked up to

LIVE WIRE

Sign up for *LIVE-WIRE* for regular e-mail updates and news from the Land Stewardship Project. Stay current on information and activities related to land stewardship, local food and grassroots organizing. To subscribe, call Louise Arbuckle at 651-653-0618 or e-mail lspwbl@landstewardshipproject.org and put in the subject line "Subscribe LIVE-WIRE." □

Apply to Minnesota Grown

If you are a Minnesota farmer, you are invited to join the grower-directed Minne-



Renewing the Countryside calendar available from LSP

The 2004 *Renewing the Countryside* calendar for Minnesota is now available from the Land Stewardship Project. The calendar is based on the *Renewing the Countryside* project, which publicizes stories of rural renewal. The calendar uses photos and stories to tell how farmers, communities, artists, entrepreneurs, educators, activists and others are working to revitalize rural Minnesota. For more information, visit www.renewingthecountryside.org, or call 1-866-378-0587.

Calendars can be picked up in LSP's White Bear Lake, Lewiston, Montevideo or Policy office. They can also be delivered through the mail by contacting Louise Arbuckle at: LSP, 2200 4th Street, White Bear Lake, MN 55110; phone: 651-653-0618 or lspwbl@landstewardshipproject.org.

sota Grown program this winter. You can apply for a calendar year Minnesota Grown license at any time, but to ensure a spot in the *MN Grown Directory* (for direct marketers), please apply by the end of February. The Minnesota Grown program, which is coordinated by the state Department of Agriculture, is designed to promote local products and help farmers connect with consumers. There are now more than 750 growers licensed to use the logo.

To request application forms for the \$5 Minnesota Grown license and perhaps a \$40 listing in the 2004 *MN Grown Directory*, call the Minnesota Grown Answerline at 1-800-657-3878 or 651-297-8695 and leave your name and mailing address. If you have Internet access, you can complete an on-line PDF application form at: www.mda.state.mn.us/mngrown/join.htm. □

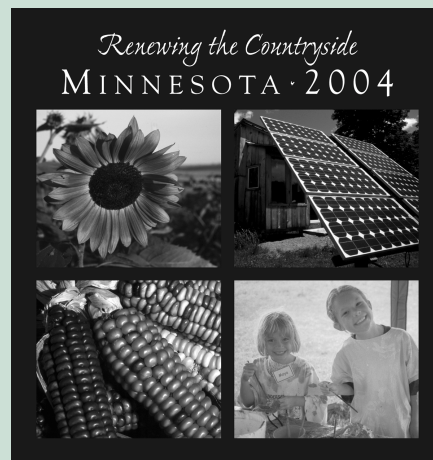
Midwestern organic info.

Looking for a one-stop resource guide to organic agriculture in the Upper Midwest? *The Upper Midwest Organic Resource Directory* contains information on resource groups, certification agencies, suppliers, buyers, processors and publications. For a free copy of the 52-page handbook, visit www.mosesorganic.org. For information on obtaining a paper version of the publication, call the Midwest Organic and Sustainable Education Service (MOSES) at 715-772-3153. □

The prices

- **LSP members**—\$8.10 plus 53 cents Minn. sales tax (add \$1.00 if mailed)
- **Non-members**—\$9.00 + .59 MN sales tax (add \$1.00 if mailed)

Make checks payable to the Land Stewardship Project.



Revisionist history

Intensive row-cropping contributes more than its share to our sediment pollution problems, but a recent study shows how farming doesn't have to be fated to live in the past

When it comes to sediment pollution of our water, there's a little bit of inevitability involved. For example, some 50 miles below Minnesota's Twin Cities lies a widening of the Mississippi River called Lake Pepin. Around three-quarters of all the eroded soil the Mississippi is carrying at that point settles to the bottom of Pepin. Much of that sediment comes from the Minnesota River, which empties into the Mississippi at Minneapolis-St. Paul. So, buried in Pepin's muck is nearly 10,000 years of Minnesota River soil erosion history. Core samples show that the Minnesota has always produced more than its fair share of sediment. Erosion is a natural part of the landscape's transformation, and the Minnesota happens to flow through a basin composed of particularly fine-grained soils.

Now for the part of the sediment pollution story that's not so inevitable. Those same core samples show the river's contribution of sediment to Lake Pepin has increased more than 12-fold since 1830, according to a study published in the March-April 2000 issue of the *Journal of Environmental Quality*.

It's no accident that this increase in sedimentation parallels the development of intensive farming in the Minnesota River basin. Ninety-two percent of the basin's land is now dominated by agriculture, and much of that farming is in the form of row crops like corn and soybeans. Converting the land from prairie, forest and wetlands to annual row crops has had major impacts on how water flows off the land, and what gets carried with that flow.

But a recent study of two watersheds that eventually feed into the Mississippi indicates that a lot can be done to change the brief, but intense, role agriculture is playing in the erosion of the land. Based on this study, the good news is that changes in agricultural production systems can go a long ways toward reducing sediment pollution. The bad news is that in some cases just a tweak here and there won't cut it—the changes will need to be significant.

Two watersheds

Perhaps humans can't control the soil structure of the Minnesota River basin, or the slope of the land on a watershed-wide

basis. But, says stream ecologist Bruce Vondracek, we can change the hydrology of a particular area—the amount of water that flows over and under soil—and at what speed it makes that journey. Studies and anecdotal evidence show that land covered with perennial plants such as grasses and trees is much less prone to erosion when compared to acres planted to annual crops such as corn and soybeans. Perennial plant cover slows down the water flow, provides year-around protection from the soil-loosening effects of rainstorms, and gives precipitation a chance to soak into the soil structure, says Vondracek, who is with the U.S. Geological Survey's Cooperative Fish and Wildlife Research Unit at the University of Minnesota. What would happen if perennial plant systems were returned to an agricultural watershed? How much of a change in the landscape would it take to reduce sedimentation to more sustainable levels?

Recently, Vondracek set out to answer that question. Working with Julie Zimmerman, who is also with the Fish and Wildlife Research Unit, and John Westra, an agricultural economist at Louisiana State University, Vondracek studied two Minnesota watersheds: Wells Creek and the Chippewa River. The study was part of a research initiative led by the Land Stewardship Project called "The Multiple Benefits of Agriculture: An Economic, Environmental & Social Analysis" (see September/October 2001 *Land Stewardship Letter*, page 1).

Wells Creek flows through steep land in southeast Minnesota before draining directly into the Mississippi. Sixty-one percent of the watershed is cropped, while 10 percent is grassland or managed pasture and 26 percent is forested. It is considered a coolwater stream with white suckers and creek chubs being the most common fish, and brown trout present in low numbers.

The Chippewa, in contrast, flows through the flat former prairies of western Minnesota before hitting the Minnesota River. Not surprisingly, 81 percent of the Chippewa watershed is cropped and 8 percent is in grassland. Only 5 percent is forested. The most common fish in this warmwater stream are carp and silver redhorse, with walleye and channel catfish present in low numbers.

In each study area, approximately 20 farmers were surveyed to identify field locations, livestock systems, crop rotations, production practices and tillage and nutrient practices being used on the land as of 1999.

The researchers then used modeling to predict what would happen to sediment loading in the two watersheds based on various land use scenarios, ranging from extension of current farming trends in each watershed (fewer and larger farms, with increased acreage in row crops and the loss of small and medium-sized livestock farms) to conversion of row crop acres to year-round permanent plant cover such as grass and trees. Under this scenario, land would be rotationally grazed for livestock production, diverse cropping rotations would be implemented to build soil quality and prairies and wetlands would be restored. All land use activities were simulated over a 50-year period (1950 through 1999) based on local weather days, so that annual variations in weather patterns would be replicated.

The modeling Vondracek and the others used is based on actual research that's been conducted in Minnesota and other Midwestern states in recent years on the impacts of row crop production and perennial plant systems on sedimentation and runoff. For example, studies done in Minnesota's Sand Creek watershed documented how each acre of a cornfield lost a dump truck's worth of soil during a single rainfall. Up the road, each acre of a field covered in grasses and hay lost about a chore bucket's worth of soil during the same storm (see April/May/June 2001 *Land Stewardship Letter*).

A dramatic reduction

What Vondracek and his colleagues found was that land use changes led to reductions in sediment loading of up to 84 percent in Wells Creek and 49 percent in the Chippewa River. How did the reductions come about? In a word: vegetation. Or even more specifically: the presence of permanent, year-around vegetation on the land.

"When you have more vegetation on

Sediment, see page 19...

the landscape, it takes a more intense rainfall to start moving sediment,” says Vondracek.

By getting more perennial vegetation on the land in the form of grasses, hay crops and trees, water runoff was reduced as much as 35 percent in both watersheds. That meant more water was percolating into the soil and less was rushing to the waterways, taking soil and other contaminants along the way. Restoring wetlands and other natural areas also helped reduce runoff considerably, according to modeling. The study only looked at sediment coming from farm fields, not the soil that erodes directly from riverbanks. But in theory less water rushing over fields should make for more stable riverbanks.

Encouraging more perennials

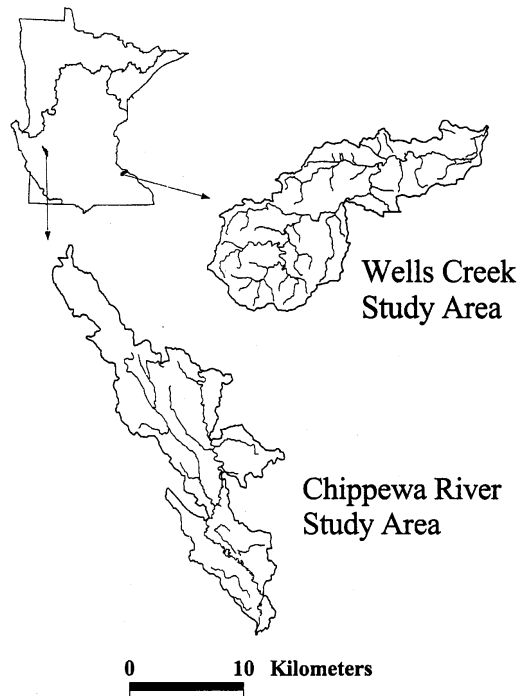
This study has a couple of policy implications. First, it provides further support for changing the federal government’s emphasis on rewarding farmers for raising row crops like corn and soybeans while it penalizes producers who have pasture or hay. Vondracek says if implemented on a wide scale basis, programs like the Conservation Security Program could help get more perennial plant cover on working farms (see page 10).

This study also has something to say about how we gauge just how much soil erosion is too much when it comes to the health of fish. This is one of the first studies to look at the possible impacts that the duration of sediment exposure can have on fish. The study indicated that a flush of huge amounts of suspended sediment during and after a storm event might not have as much of a negative impact on fish health as lower levels of suspended sediment present over a longer period of time. Fish can tolerate relatively high concentrations of sediment for a short time, but if the sediment lingers after a thunderstorm, the tolerance level drops dramatically. The critical factor is that fish become more sensitive the longer they are exposed to suspended sediment.

“Not only do we have to reduce the amount of sediment going in, but we have to look at the duration of the exposure,” says Vondracek. “Fish can handle a very high concentration if it’s just one day. But

even if we reduce that concentration by a factor of 150, it’s still a problem if it’s present over a long period of time.”

The Minnesota Pollution Control Agency has proposed listing a stream as “impaired” for turbidity if it exceeds 46 milligrams of suspended sediment per liter of water. This is part of a larger effort on the part of environmental regulatory agencies to set “total maximum daily load”—TMDL for short—requirements for certain pollutants. Vondracek, Zimmerman and Westra’s



study, which was published in the October 2003 edition of the *Journal of the American Water Resources Association*, concluded that the Pollution Control Agency’s proposed TMDL for sediment would be exceeded 30 days a year in the systems they studied. That means such a limit may be too high if it is meant to protect fish health. Vondracek says a better way to set levels is to take into consideration the duration of the sediment exposure, not just how much is entering a river system on any given day.

If chronic sedimentation is to be controlled on a consistent basis, tweaking current farming practices using conservation measures called “best management practices” (BMPs) may not be enough in all watersheds. When BMPs such as conservation tillage and the establishment of strips of permanent vegetation (called

riparian buffers) were used in the Wells Creek watershed, “lethal” concentrations of suspended sediment—levels high enough to kill fish—went down an astounding 63 percent. However, in the Chippewa River such practices did not significantly affect the negative impacts sediment levels had on fish. The Chippewa’s soil structure and the extent to which it’s being farmed intensively makes reducing its sediment problems all the more tough, says Vondracek.

“We have to make substantial changes there to kick the sedimentation problem. Just BMPs, according to our modeling, won’t be adequate. We don’t address the root cause with BMPs, which is lack of vegetation.”

Does that mean idling massive tracts of land in the Chippewa River watershed? Not necessarily, says the biologist. In the 1990s, Vondracek worked on the Monitoring Project, a Land Stewardship Project-led initiative that brought together scientists and farmers to develop a set of criteria for determining how to gauge the sustainability of farming practices. Through the research he did on that project, Vondracek saw how farming systems such as management intensive rotational grazing can go a long way toward reducing sedimentation in the kinds of farm streams that make up larger watersheds like the Minnesota and Mississippi basins.

“Through my interaction with the Monitoring Team farmers, I saw how working farmland could have a positive impact on watershed health,” says Vondracek, who is now a member of LSP’s Board of Directors. “But changing the way our water flows off the landscape takes time—it we want real change then steps need to be taken soon to promote and establish these kinds of sustainable farming practices.” □

The Multiple Benefits of Agriculture report

For a copy of *The Multiple Benefits of Agriculture: An Economic, Environmental & Social Analysis*, call 651-653-0618 or e-mail lsplib@landstewardshipproject.org. The price of the 52-page publication is \$12 (\$12.78 for Minnesota residents), plus \$3 shipping and handling. A brief executive summary of the report is free. The report and executive summary are also available at www.landstewardshipproject.org/programs_mba.html.



Food Politics How the Food Industry Influences Nutrition and Health

By Marion Nestle

2002; 457 pages; \$29.95 (hardcover);

\$15.95 (softcover)

University of California Press

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Reviewed by Dana Jackson

“**H**eat healthy diets rich in grain products with soluble fiber like Purely O’s may lower cholesterol” reads the wording on the cereal box I bought recently at the River Market Food Coop. Made by Cascadian Farm (now owned by General Mills), it looks like an organic version of Cheerios. Because of its sale price, I picked up a new product, Essential 10, described on the box as a “Heart Sense” high fiber cereal also containing 20 mg. soy isoflavones and 100 percent RDI (recommended daily intake) folic acid and 35 percent RDI calcium.

Do I need soy isoflavones and folic acid in my diet? I don’t know. And according to Marion Nestle, author of *Food Politics: How the Food Industry Influences Nutrition and Health* (and no relation to Nestle Foods), I’m not alone: “people seem increasingly confused about what they are supposed to eat to stay healthy,” says Nestle, who is chair of the Department of Nutrition and Food Studies at New York University.

It is common knowledge however, that Americans are eating more calories than they burn off and over half of us are overweight. “Four of the ten leading causes of death—coronary heart disease, cancer, stroke, and diabetes—are chronic diseases related in part to diets providing excessive energy, fat, cholesterol, or salt, writes Nestle, who worked as a nutrition policy adviser for the Department of Health and Human Services, and was editor of the 1988 Surgeon General’s Report on Nutrition.

In spite of all the nutritional information provided on food packages, the food industry is not really interested in selling

health but in selling more, the author explains. And while the overall demand for food may be inelastic (see Willard Cochrane’s interview on page 2), the food industry has Americans wearing elastic belts to accommodate super-sized fast food meals. Over 11,000 new products were introduced in 1998, and two thirds of those were candy, snacks, baked goods, soft drinks, cheeses and ice cream.

The USDA has found it difficult to both promote agriculture and at the same time advise the public about diet and health. Publication of the Food Pyramid was delayed for a year by the Secretary of Agriculture because of pressure from meat and dairy commodity groups. The shape of the pyramid upset food companies because it clearly ranked some food groups as better than others.

But this book is about food politics, and Nestle describes how food companies lobby Congress for favorable laws and federal agencies for favorable regulations.

She describes the revolving door between food company lobbyists and regulatory agencies and how the food industry makes campaign contributions to elect members of Congress, which sometimes enables them to help write legislation that they want passed.

In addition, food companies foster connections with nutrition professionals by sponsoring research and sometimes use results of company-sponsored academic research in advertisements for their companies’ products. They also sponsor special sessions at professional conferences, such as ones held by the American Dietetics Association, and make contributions for publication of professional journals, such as the *Journal of Nutrition Education*.

The political power of the food supplement industry is a major theme in *Food Politics*. I’ve been amazed at all those bottles of herbal remedies on shelves in health food stores, coops and even supermarkets and wondered if they can really produce what the labels claim.

The Food and Drug Administration (FDA) can’t tell us, because after decades of political action by the makers of dietary supplements, who turned consumers into lobbyists by scaring them into thinking they wouldn’t be able to buy vitamins, Congress passed the Dietary Supplement Health and Education Act of 1994. That law deregulated supplements and undermined the FDA’s authority to ensure the accuracy of information on labels of these products. Today, supplements are just assumed to be safe, and all the manufacturer must do to start selling a

product is to send the FDA some evidence of a history of use or benefit 75 days before it goes on the shelf.

Health claims sell products, and food companies urged the FDA for years to develop a liberal policy on health claims for conventional foods. Kellogg cereal company started this with a campaign in 1984 for its All Bran cereal. Kellogg, working closely with the National Cancer Institute, implied that fiber might reduce the risk of cancer. The FDA disapproved of this kind of claim because there was no scientific evidence to support it. However, the Federal Trade Commission endorsed the Kellogg advertisements, and eventually the FDA backed down. By 1989, 40 percent of all new food products contained a health message in their advertising.

That’s why my Purely O’s have a heart on the box that says “Heart Healthy” and my box of Essential 10, with its folic acid and soy isoflavones, has a heart on it that says “Heart Sense.” Nestle discusses folic acid and soy isoflavones in a chapter on the fortification of food. Folic acid is added to insure that women of childbearing age who may be pregnant will reduce risk factors for neural tube defects. No, I don’t need extra folic acid. And I learn from the book that soy protein with isoflavones was once thought to lower blood cholesterol levels, but later studies suggested that soy might have some disadvantages, like increasing the risk of coronary heart disease or of breast cancer. But my cereal box says that soy isoflavones have been found to support bone and heart health.

Confused? So am I.

People seem to want magic bullets for health and want to believe that a food supplement could be the answer to a real or perceived health problem. Devotees to nutritional supplements display a faith in their potential to support healthy hearts or livers or bones, and no evidence to the contrary will convince them otherwise.

But, I wasn’t looking for a magic potion when I bought Essential 10. The only reason I buy processed breakfast cereal for myself is for those times when I’m running too late to cook regular oats, which I fortify with sunflower seeds, wheat germ and raisins, or the 7-grain cereal to which I add date pieces and walnuts (with 1 percent Cedar Summit milk on it of course). I think this kind of cereal fits on the bottom of the Food Pyramid, not the processed kind. □

Dana Jackson is the Land Stewardship Project’s Associate Director.

Navigating the GEIS: Manure & Soil

An ongoing series on the Animal Agriculture GEIS

It's no secret manure can have a negative impact on water, but what effect does it have on soil?

According to Minnesota's Generic Environmental Impact Statement (GEIS) on Animal Agriculture, manure gets a bit of a bad rap because of its reputation as purely a waste product. When applied to the land in proper proportions, it can have a very positive impact on the quality of soil. And healthy soil not only produces good crop yields, it results in less pollution in the form of erosion and contaminate runoff. But making sure manure is spread on the land in proper amounts is getting increasingly difficult as more animals get concentrated on fewer farms, concludes the GEIS report, "Topics I & J Soils and Manure Issues."

A team consisting of University of Minnesota scientists and experts from the USDA's Natural Resources Conservation Service and Minnesota Department of Agriculture examined the literature and current research associated with manure's impact on soil.

One thing they show is that when compared to inorganic fertilizers derived from petroleum products, manure is the soil quality king. Manure provides greater biological activity, increases water holding capacity and infiltration, boosts soil organic matter levels, reduces erosion potential, and provides a friendlier environment for earthworms and other critters critical to a healthy loam.

So it's no surprise organic farms, which often rely on manure as a fertility source, have higher soil quality compared to their conventional counterparts, according to the GEIS.

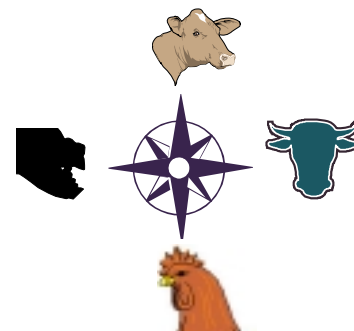
The GEIS did not differentiate between liquid manure and its drier counterpart (farmers report that dry manure mixed with straw or other bedding from a swine hoop house system reduces erosion better because it provides more soil surface residue). However, it did compare the impact on soil quality of applying manure at proper agronomic rates and at "disposal rates"—just pouring it on to get rid of it. Getting dumped on may have a negative effect on soil in the short-term, but it eventually recovers, say the researchers. However, one of the reasons it recovers is the excess manure leaves the field, where it can become a water quality problem.

Hauling liquid manure more than a mile from a facility is exorbitantly expensive, according to the GEIS. So

economic pressure often encourages farmers to apply manure closer to livestock facilities at higher rates. The more livestock concentrated at a facility, the more manure applied to nearby fields. This has created a situation where manure is increasingly treated as a waste product, rather than a source of fertility.

Write the researchers: "In the past, animal and crop production were closely linked. As these two operations are increasingly separated from one another, manure is not returned to the cropland that fed the animals. This means that nutrients are exported from the cropland, and fewer acres receive the soil quality benefits of manure application. As manure is concentrated in smaller areas, it becomes more difficult to handle as a nutrient source and its pollution potential increases."

Indeed, a report released by the USDA's Economic Research Service in June found that only 18 percent of large hog farms and 23 percent of large dairies are applying manure on enough cropland to meet Environmental Protection Agency standards for nitrogen (nitrogen leaching is a major water quality problem). If water quality concerns force large-scale livestock facilities to spread their manure on more land, they could be put at a serious economic disadvantage. Smaller and medium-sized livestock farms that have the land available for utilizing



manure at proper agronomic rates become more competitive as a result, concludes the USDA study.

Farms utilizing methods which cut down on the need to store and transport millions of gallons of liquid manure may particularly benefit from a regulatory environment that limits manure applications. When done properly, pasture-based systems such as management intensive rotational grazing allow livestock to spread their own manure on the soil in a manner that allows plants to efficiently utilize the nutrients. The authors of the GEIS report on soils and manure say that rotational grazing is a very efficient way to cycle nutrients back into the soil. However, they caution that good pasture management is critical when using such systems and recommend research into the long-term effects of grazing systems on soil quality.

Of course, such research would need to be done under the assumption that large-scale full confinement production is not the only future option open for livestock farmers to stay in business. □

Navigate the GEIS yourself

To get a copy of the Generic Environmental Impact Statement on Animal Agriculture, you can log onto www.mnplan.state.mn.us/eqb/geis. A CD-ROM version of the report is also available for \$5 (that covers shipping and handling). If you have a computer, the CD-ROM is a good investment: all 7,000 pages are cross-referenced, making for easier researching. For information on ordering the CD-ROM, call the Environmental Quality Board (EQB) at **651-296-2888**. Some regional **Minnesota libraries** also have the report available. If your local library doesn't have it, call the EQB to find the closest library that carries it.

To find the study discussed here

→ If you're on the Internet, the direct address for the literature summary is

www.mnplan.state.mn.us/eqb/geis/LS_Soil.pdf, and for the technical working paper it's www.mnplan.state.mn.us/eqb/geis/TWP_Soil.pdf.

→ On CD-ROM, you can find the soils literature review by clicking on the file **LS_SOIL.PDF**. For the technical working paper, click on **TWP_SOIL.PDF**.

→ For both papers, the best place to start is the executive summary.

→ The **USDA study** referenced here is called *Manure Management for Water Quality: Costs to Animal Feeding Operations of Applying Manure Nutrients to the Land*. It can be accessed on the Internet at www.ers.usda.gov/publications/aer824. For information on purchasing a paper copy, call 1-800-999-6779.

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Membership Update



The power of compounding interests

By Cathy Eberhart

Where's the money? Where's the power? You might be surprised. In the last issue of the *Land Stewardship Letter*, I wrote about fundraising as social change work. Raising money to pay for the hard work of creating a better food and farming system has become my passion. Along the way, I hope to also break down some myths that surround money—especially philanthropic dollars.

Just about every grassroots fundraising book I've ever read starts with the following surprising facts about where philanthropic dollars come from:

- In 2002, nearly \$241 billion was given to nonprofit organizations. Of that amount, only 11 percent came from foundations and even less—5 percent—came from corporations. The remaining 84 percent—nearly \$202 billion—came from individuals.

- 85 percent of money given by individuals is given by households with incomes of \$60,000 or less.

Even though I've heard these facts many times now (and you may have too), they still inspire me. Most of the money comes from most of us. Ordinary people like you and me have the money needed to make the change that we all want.

Likewise, in a democracy, power resides with the people. Yes, I know, the work that we do often pits us against very powerful (and well funded) corporate and political interests. Sometimes the battles seem nearly hopeless. And yet, time after time, we have found that when ordinary people come together to speak out, to make phone calls, to send e-mails, to vote—it is actually the people who still hold the power.

Don't take my word for it. The Conservation Security Program (see page 10) is a good example. There are powerful interests that would rather not see this program become a reality. Thankfully, ordinary citizens working together are even more powerful. Because of the efforts of Land Stewardship Project members like you, the Conservation Security Program is moving forward.

That is why my work recruiting

members and raising money for LSP is so rewarding and urgent. That's why I need your help.

2004 promises many more battles. The more members we have standing together, the more powerful we will be.

2004 also promises many more opportunities to create a food and farming system that is good for the land, for our communities and for our health. But the hopeful work of getting more farmers on the land through our Farm Beginnings classes or providing healthy, local food for all of us through The Food Alliance and Pride of the Prairie cannot happen without financial contributions from individuals like you.

So, here is how you can help:

1) Support this work with your financial contributions to LSP, whenever you can, for as much as you are able.

2) Spread the word. Pass on this newsletter or call any of our offices for an LSP brochure (or two or 10!). Ask the people you know to join. Tell them we need them on our side pushing together.

Together, we have the power and the

financial capacity to do the work that needs to be done. □

Cathy Eberhart is LSP's Membership Coordinator. She can be reached at 651-653-0618 or cathy@landstewardshipproject.org

Name dropping

Here is another way you can help—let us use your name.

To recruit new members, the Land Stewardship Project occasionally trades our members' names with like-minded groups for one-time mailings. According to our privacy policy, we never sell or rent our members' names and we usually only trade one or two times per year.

To expand our membership base in time for our upcoming legislative session, we are preparing to do a couple of list trades in January and February.

If you would rather that we not trade your name, simply contact Cathy at 651-653-0618 or cathy@landstewardshipproject.org.

For a copy of our privacy policy, visit the LSP Web site or call 651-653-0618.

Support LSP in your workplace

The Land Stewardship Project is a proud member of the Minnesota Environmental Fund, which is a coalition of 18 environmental organizations in Minnesota that offer workplace giving as an option in making our communities better places to live. Together member organizations of the Minnesota Environmental Fund work to

- promote the sustainability of our rural communities and family farms;
- protect Minnesotans from health hazards;
- educate citizens and our youth on conservation efforts;
- preserve wilderness areas, parks, wetlands and wildlife habitat.

A PROUD MEMBER OF



You can support LSP in your workplace by giving through the Minnesota Environmental Fund. Options include giving a designated amount through payroll deduction, or a single gift. You may also choose to give to the entire coalition or specify the organization of your choice within the coalition, such as the Land Stewardship Project. If your employer does not provide this opportunity, ask the person in charge of workplace giving to include it. For more information, call 651-653-0618 or e-mail lsplib@landstewardshipproject.org.

STEWARDSHIP CALENDAR

→ **JAN. 16**—LSP's Dana Jackson will speak at the **Quivira Coalition annual conference**, Albuquerque, N. Mex.; Contact: Courtney White, 505-820-2544

→ **JAN. 16-18**—**Wisconsin School for Beginning Market Growers, University of Wisconsin-Madison**; Contact: John Hendrickson, 608-265-3704;

jhendric@facstaff.wisc.edu

→ **JAN. 23-24**—**Minnesota Organic & Grazing Conference**, St. Cloud Civic Center; Contact: Meg Moynihan or Mary Hanks, 651-296-1277

→ **JAN. 27**—**Land Stewardship Project "Pig Power" Alternative Swine Meeting**, Redwood Falls, (Minn.) Community Center (see page 9 for details)

→ **JAN. 29-30**—**Iowa Fruit & Vegetable Growers Association Annual Convention**, Marshalltown, Iowa; Contact: Debi Smith, 515-465-5992;

ifvga@att.net

→ **JAN. 30-31**—**6th Annual Midwest Value Added Conference: Enhancing Profit on the Farm**, Eau Claire, Wis.; Contact: 715-834-9672;

heather.amundson@wi.usda.gov
→ **FEB. 2**—**2004 Minnesota Legislative Session convenes**; Call LSP's Policy Program at 612-722-6377 for information on legislative issues affecting family farming, sustainable agriculture and a food system that's safe & environmentally sound

→ **FEB. 5-6**—**Upper Midwest Regional Fruit and Vegetable Growers Conference & Trade Show**, St. Cloud Civic Center; Contact: 763-434-0400;

www.mfvga.org

→ **FEB. 5-7**—**Northern Plains Sustainable Agriculture Society's 25th Annual**

→ **FEB. 7**—**Business plan workshops for beginning farmers & others in southeast Minn.** (details to be announced; similar workshops will be held in western Minn.); Contact: Caroline van Schaik, LSP, 507-523-3366; caroline@landstewardshipproject.org

Winter Conference, featuring David Kline & Wendell Berry, Mandan, N. Dak.; Contact: 701-883-4304 or www.npsas.org

→ **FEB. 9**—**Minnesota Environmental Partnership Legislative Reception & Forum**, 5 p.m.-9 p.m., Sheraton Four

→ **FEB. 12**—**Food Alliance Annual Meeting**, Radisson Hotel South, Bloomington, Minn.; Contact: Jean Andreasen, 651-265-3682 or jean@foodalliance.org

→ **FEB. 13-14**—**LSP's Dana Jackson will keynote the Festival of Healthy Living**, Lincoln, Neb.; Contact: Paul Rohrbaugh, 402-869-2288

→ **FEB. 14**—**Business plan workshops for beginning farmers & others in southeast Minn.** (see Feb. 7)

→ **FEB. 21**—**Sustainable Farming Association of Minnesota Annual Meeting**, Waldorf School, St. Paul, Minn.; Contact: Julie Bloor, julieforager@yahoo.com, or Mary Jo Forbord, 320-760-8732; mforbord@sfa-mn.org; www.sfa-mn.org

→ **FEB. 25**—**Protect our Water Citizens' Day, Minnesota Capitol**, St. Paul; Contact: Bobby King, LSP, 507-523-3366; or Paul Sobocinski, LSP, 507-342-2323

→ **FEB. 26-28**—**2004 Upper Midwest Organic Farming Conference & Organic University**, La Crosse, Wis.; Contact: 715-772-3153; www.mosesorganic.org

→ **MARCH**—**Land Stewardship Project "Pig Power" Alternative Swine Meeting**, southeast Minnesota area (details to be announced); Contact: Terry VanDerPol, 320-269-2105; tlvdvp@landstewardshipproject.org

→ **MARCH 6**—**Business plan workshops for beginning farmers & others in southeast Minn.** (see Feb. 7)

→ **MARCH 13**—**Sally Fallon's "Nourishing Traditions" presentation by Tara Scaife & Anne Mark**, Houston Community Center, Houston, Minn.; Contact: Anne Mark, 507-896-2224

→ **APRIL**—**LSP's Introduction to Grazing with Howard Moechnig**, (exact date to be announced) southeast Minn. LSP office, Lewiston; Contact: 507-523-3366; stettler@landstewardshipproject.org

→ **APRIL 25-27**—**LSP's Dana Jackson will be a keynote speaker at "Eating as a Moral Act: Ethics & Power from Agrarianism to Consumerism,"** University of New Hampshire, Durham, N.H.; Contact: 603-862-4088; www.sustainableunh.unh.edu/fas/eating_moral_act.html

→ **MAY 1-2**—**Living Green Expo, Minnesota State Fair Grounds, 1265 Snelling Ave. N., St. Paul, Minn.**; Contact: www.livinggreenexpo.org or 612-331-1099

→ **FEB. 25**—**Protect our Water Citizens' Day, Minnesota Capitol**, St. Paul; Contact: Bobby King, LSP, 507-523-3366; or Paul Sobocinski, LSP, 507-342-2323

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Check www.landstewardshipproject.org for the latest on upcoming events.



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