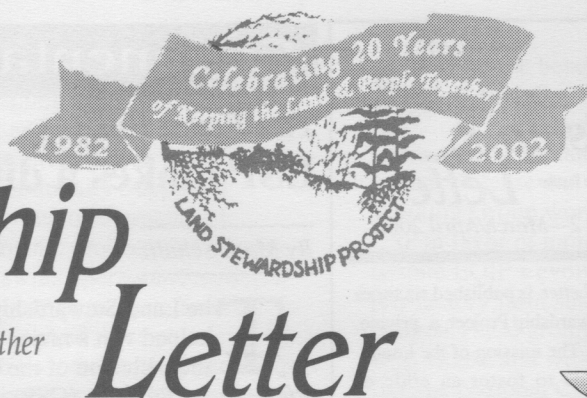


The Land Stewardship

Keeping the Land and People Together



Vol. 20, No. 2

www.landstewardshipproject.org

MARCH/APRIL 2002

Antibiotics, Agriculture & Resistance

There is growing evidence that factory livestock farming produces more than cheap food—it also pumps out a bumper crop of antibiotic-resistant bacteria (first in a series).

By Brian DeVore

Wonder Drug Invades the Barnyard,” proclaims the first frame of a 1950s-era newsreel. A pair of white-coated scientists is shown weighing an eight-week old chicken raised on regular feed: the bouncing needle on the hanging scale settles on one and a quarter pounds. Next comes a chicken that’s received “wonder drugs”—antibiotics—in its feed. The needle arcs past the two-pound mark.

“Big news for farmers: antibiotics, the so-called wonder drugs, added to the diet of poultry and pigs, bring amazing results,” pronounces the narrator in typical hyped-up newsreel fashion. “What a change it threatens to bring about.”

Half a century later, that statement has turned out to be right on the mark in more ways than one. The use of antibiotics as growth promotants has revolutionized the livestock industry. These bacteria killers have made it possible to raise more animals in smaller spaces in a shorter amount of time. But the newsreel narrator’s use of the word “threatens” has proven hauntingly relevant as well. Mounting evidence, much of it emerging in just the past few years, indicates that feeding low levels of antibiotics to livestock is

putting at risk the very survival of these wonder drugs. Critics say the use of antibiotics in animal farming could return us to the “dark ages” when people died of simple infections due to a lack of effective bacteria killers.

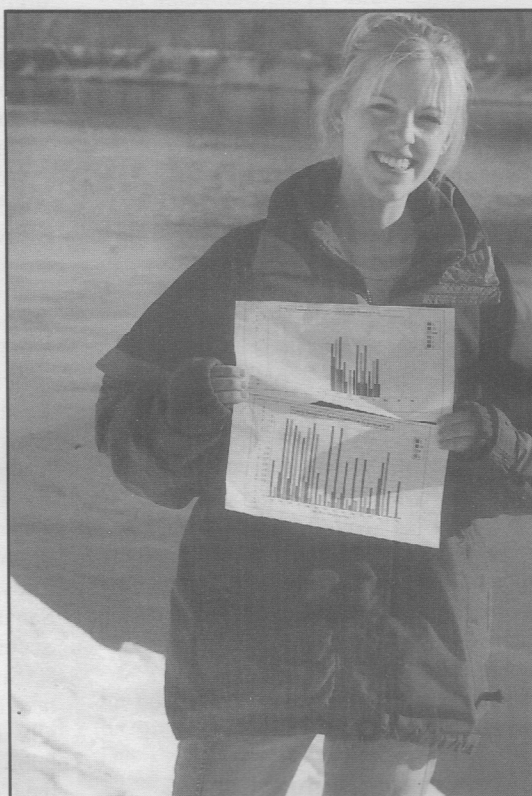
These concerns are prompting calls for restrictions on the practice of adding antibiotics to feed. Would such restrictions throw meat, milk, egg and poultry production into a dark age of its own, a time when the livestock industry is slow,

sloppy and feeds a lot fewer people? Or would they open the door to a more sustainable, family-farmer based food production system?

Putting on the pounds

Antibiotics—the term literally means “against life”—have had a relatively short, but very potent, career. Penicillin was first made available to the public in 1942, and it soon became clear this was a major breakthrough in medical science: suddenly common infections that had been killing people for all of human history could be controlled. More antibiotics were developed and it didn’t take long for scientists to figure out that

Antibiotics see page 12...



Wendy Halterman holds charts she has developed showing antibiotic-resistant bacteria trends on the Minnesota River. See page 14 for more on research related to the presence of superbugs in the environment. (LSP photo)

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The Land Stewardship Letter is published six times a year by the Land Stewardship Project, a private, nonprofit organization. The mission of the Land Stewardship Project is to foster an ethic of stewardship for farmland, to promote sustainable agriculture and to develop sustainable communities. Members of the Land Stewardship Project receive this newsletter as a benefit. Annual membership dues are \$35.

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Commentary !?!?!?

The Farm Bill

LSP makes a difference at the national level

By Mark Schultz

The Land Stewardship Project helped win a major victory with the inclusion of the Conservation Security Program (CSP) in the 2002 Farm Bill, which was signed into law earlier this spring. The CSP, budgeted at \$2 billion over 10 years, will reward farmers who care for the land by paying for the public benefits that stewardship farming produces.

Unfortunately, the bulk of the 2002 Farm Bill was a giant step backward in its budget-busting support for large-scale agribusiness, to the detriment of the land and people of rural America. That's why LSP did not support the 2002 Farm Bill.

Perhaps the worst betrayal of the public interest was the Farm Bill conference committee's removal of the ban on corporate meatpacker ownership of livestock, despite nationwide support for the measure by farmers and ranchers. LSP, with our allies in the Campaign for Family Farms, brought the "packer ban" to the brink of victory (see Nov./Dec. 2001 *LSL*)—an outcome all the political insiders told us we were crazy for even considering. But the leadership of the U.S. House, and particularly House Agriculture Committee Chairman Larry Combest of Texas, followed orders from the packer lobby and shot the ban down. Such pro-corporate policy shows the House leadership's true colors, despite any "free market and opportunity" rhetoric.

While the packer ban loss is bitter indeed—in a healthy democracy, the packer ban would have passed because it was truly supported by the people—we **will continue to fight for the packer ban** as Federal legislation. Economic justice is an essential ingredient to LSP's work, just as livestock owned and dispersed across the landscape on family farms (and not in packer-controlled factory farms) is a critical ingredient of a sustainable food and agriculture system.

CSP: A major victory for sustainable, family farming

Despite our opposition to the Farm Bill in general, the Conservation Security Program is a bright spot on the policy landscape. CSP represents a fresh,

exciting approach to environmental stewardship on working farmlands. Right now, 85 percent of Federal conservation funds go to take land out of production and idle it. At the same time, U.S. farm policy has prioritized billions of dollars of government payments for the maximum production of a handful of commodity crops (e.g. corn, soybeans, wheat, cotton and rice), a policy which has caused untold damage to our nation's soil and water and which is designed to keep the price of grain artificially low to the benefit of factory farms and big grain corporations like Cargill.

In late 1998, LSP's Federal Farm Policy Committee decided to work for a major change in the existing farm policy. Beginning with the idea of full-cost accounting (making sure that the costs that society pays through the loss of a farm-based rural middle class or through higher taxes for environmental clean up, for example, are factored into the cost of agricultural systems), LSP set a course to draft new farm policy. We wanted this policy to be steeped in the experience of sustainable agriculture and to truly support stewardship of the land, rural communities and the family farm system of agriculture.

At the end of February 1999, a contingent of 13 farmers from the Midwest, led by LSP Federal Farm Policy Committee members, traveled to Washington, D.C. In the course of three days, we held 36 meetings with U.S. Senators and Representatives, as well as USDA officials. We promoted the idea of a Farm Results Index, which would provide the basis for directly connecting farm program payments to environmental and social benefits produced. Our contingent also described how current policy is dramatically tilted against stewardship. These ideas formed the core of Iowa Senator Tom Harkin's Conservation Security Act, which he proposed in 1999.

Since that time, LSP has continued to take leadership in Minnesota and nationally to develop the concepts and build the public support for what has now become the Conservation Security Program. Besides Senator Harkin (he's now Chair of the Senate Agriculture Committee),

members of LSP's Federal Farm Policy Committee have met with Minnesota's Congressional delegation: Senators Paul Wellstone and Mark Dayton, and Representatives Gil Gutknecht, Mark Kennedy, and Collin Peterson. During 2001, LSP committee members Dave Serfling and Dan Specht, and LSP Board member Monica Kahout, testified at U.S. Senate Agriculture Committee hearings in Washington and in Minnesota. We generated letters to the editor, newspaper and magazine stories and editorials, as well as countless calls and faxes to members of Congress on behalf of the Conservation Security Program, eventually winning the firm support of both of Minnesota's U.S. Senators for full funding for the program.

That support turned out to be key. The U.S. House, led by Combest, opposed the CSP. The House instead favored increased commodity program payments and conservation policies that are a combination of "more of the same" — more land taken out of farming and idled, for example—and a new subsidy for factory farms. This latter strategy involves funneling tax money to factory farms in the name of conservation through a much-distorted Environmental Quality Incentives Program (EQIP). The existing restriction in EQIP that prevents funds from being provided to factory farms was removed in the 2002 Farm Bill, and the maximum payment to any one operation of \$50,000 over five years skyrocketed to \$450,000 over six years.

Perhaps we shouldn't be surprised at EQIP's transformation from a solid conservation program to a factory farm boondoggle. Overall, the 2002 Farm Bill is an acceleration of taxpayer subsidies for industrial agriculture. Major Senate reforms, such as the ban on packer ownership of livestock and meaningful limits on the amount of public funds any one operation could receive in program payments, were stripped from the bill by the U.S. House.

But through it all the CSP survived. For the first time, farmers who have practiced good stewardship (for example, have not planted corn or soybeans year after year on the fragile soils and steep slopes of southeast Minnesota and northeast Iowa, and instead used sophisticated resource-conserving crop rotations or grass-based livestock systems), will receive payments for the multiple benefits their farming systems generate for society: soil conservation, increased

biodiversity and wildlife habitat, healthy food, maintaining small and moderate scale farms, and enhanced water quality. Farms representing a wide range of systems—Community Supported Agriculture, rotational grazing of livestock, organic produce and crops, sustainable swine operations, conservation tillage—can participate and receive CSP payments. And these payments are not based on how much of a commodity these farms raise, but on the environmental and conservation benefits produced for society. **That is a major victory.** Farm programs have given the public a very poor return on its investment: crop surpluses, bigger farms and environmental degradation. Now there's an opportunity for tax money to support positive changes on the land.

The credit for this victory belongs to many people. The Sustainable Agriculture Coalition, of which LSP is an active member, has led the fight for the CSP from the beginning. The Minnesota Project has provided excellent leadership nationally with the National Campaign for Sustainable Agriculture in developing the CSP and educating policymakers. Members of the Midwest Sustainable Agriculture Working Group kept pushing for CSP and providing information about its benefits.

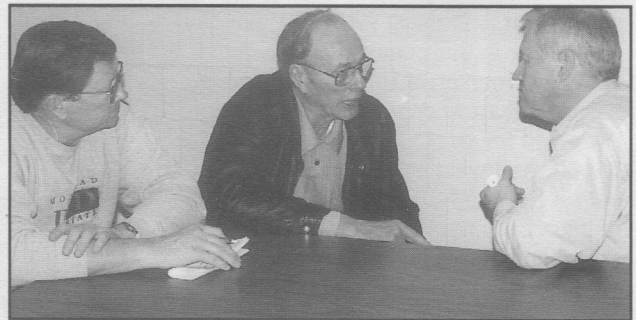
I'm especially impressed with the difference LSP members made, particularly last fall and winter as the final policy was being debated and voted on. Many LSP members called, faxed and e-mailed Congress to push for progressive policy.

Especially critical to the CSP's success nationally was the hard work and far-reaching vision of LSP's Federal Farm Policy Committee: Dwight Ault, Dan French, Paul Homme, Jeff Klinge, Greg Koether, Mark Schultz, Dave Serfling, Paul Sobocinski, Dan Specht and Sister Kathleen Storms. As committee member Dan French said in calling for change in 1998: "We have to stop just reacting to bad proposals—we need to get ahead of the curve and push for what we want."

That is what we have done with the CSP. We had to fight off a last-minute attempt by opponents of the program to deny farmers the right to freely apply for

and receive the benefits for which they qualified according to the level of stewardship they were practicing. Out-of-touch environmental groups like Environmental Defense and the Environmental Working Group worked to undercut the CSP in favor of more EQIP money, despite EQIP's evolving into a terrible pro-factory farm subsidy with a bloated budget. These groups found allies in the U.S. House and with commodity groups like the National Cattlemen's Beef Association. However, good grassroots organizing and coalition-building with groups like Defenders of Wildlife and the Sierra Club prevailed, meaning stewardship farmers across the country now have at least one important element of policy that applies to them.

As Dave Serfling, who was the key



A joint Land Stewardship Project-Minnesota Farmers Union meeting was held April 2 in Granite Falls, Minn., with U.S. Representative Collin Peterson. More than 25 farmers talked to the Representative about priority issues in the Federal Farm Bill. Peterson served on the bill's joint House/Senate conference committee, and represents Minnesota's Seventh Congressional District.

Shown talking to Peterson are LSP farmer-members Jack Christensen (left) and Rodney Skalbeck. (photo by Audrey Arner)

drafter of LSP's original Farm Results Index, says, "With CSP, we have made a big step forward for land stewardship and family farms. Now we need to make sure USDA implements it fairly and well, and then move on to further reforms for a policy that cares for the land, supports rural communities and provides fair opportunities for family farmers." □

Mark Schultz is LSP's Policy Program Director. For information on how you can help get the CSP up and running, and work to win other policy reforms, contact Schultz at 612-722-6377 or marks@landstewardshipproject.org.

The security threat to end all security threats

Editor's Note: John Ikerd, a professor emeritus of agricultural economics at the University of Missouri, keynoted the 11th Annual Conference of the Sustainable Farming Association of Minnesota, held Feb. 23 in Northfield. Below are a few excerpts from his talk, "The Real Costs of Globalization—to Farmers, Consumers, and Our Food System."

Some cost accounting

"So what are the real costs of globalization? Well to farmers true economic globalization, or a single economy, could mean the end of American agriculture as we know it....Perhaps we won't abandon agriculture in this country, but we could easily find ourselves in a situation where we are at least as dependent on the rest of the world for our food as we are today for our oil. And what's the cost of keeping our oil flowing today? What is the military cost involved that you and I and everybody knows is directly related to our lack of independence with respect to oil? How many small wars will we fight in the future because of our dependence on other countries for food?"

The real competition

"Corporate contractual control of agriculture will eventually give [corporations] the power to say where and by whom in the world will produce what. Those corporations are multinational corporations with stockholders all around the world. And they don't care where they produce. They don't have families. They don't have communities. They don't have a nationality. They have no commitment to this country. They will simply move their agricultural production systems

wherever on the globe they can produce at the lowest cost and increasingly that will not be in the U.S.

"And they will move to wherever on the globe they can pollute the most because that's what it's about, is a moving to somewhere not necessarily where it's more efficient but where you have fewer constraints on the exploitation of people and the land. Globalization today is not about a competitive advantage. It's about a comparative advantage in terms of exploitation rather than economic activity."

You're the one

"The powers of globalization are strong. The World Trade Organization is

strong. The multinational corporations are strong. The countries that are committed to free trade are strong. And if you would look at it you would say the odds are against us....[But] one-by-one over the years we transformed our local food system to a global food system. And when change happens in the future it will happen one-by-one. It will happen one-by-one as farmers like you here today decide to do something different; decide that you are going to sell your products somewhere different than you've been selling them; decide you're going to produce something different and connect with a consumer locally." □

To view many of John Ikerd's papers on sustainable agriculture and trade issues, log onto <http://www.ssu.missouri.edu/faculty/JIkerd/papers/default.htm>.

Myth Buster Box

An ongoing series on ag myths & ways of deflating them

◆ **Myth:** Anti-corporate farm laws stifle rural economic development.

◆ **Fact:** Counties in states with anti-corporate farming laws have fewer families in poverty, lower unemployment and higher percentages of farms realizing cash gains, according to an analysis conducted by two rural sociologists.

Using the 1982 and 1992 Censuses of Agriculture, Tom Lyson of Cornell University and Rick Welsh of Clarkson University analyzed data from the 433 counties in the U.S. classified as "agriculturally dependent"—meaning at least 75 percent of the county's land is used for farming and 50 percent of the county's total gross receipts for goods and services comes from farm sales. They then compared the economic vitality of counties in states with anti-corporate farm laws to counties in states that had no such restrictions.

Nine Midwestern states—Minnesota, Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota and Wisconsin—have adopted laws that restrict corporate involvement in agriculture. These laws are perennially under attack from large-scale agribusiness interests who argue they stifle economic activity and ultimately hurt farm-dependent counties.

But what Lyson and Welsh found was that, in general, agriculture dependent counties in states with anti-corporate farming laws fared better—fewer families in poverty, lower unemployment and higher percentages of farms realizing cash gains—economically than agriculture dependent counties in states without such laws. The analysis also indicates that some level of agricultural industrialization isn't necessarily always bad for a county, in that it might add diversity to the economy. However, when that industrialization starts to dominate a county's agriculture, crowding out less industrialized farming, the region suffers. And the lack of anti-corporate agriculture laws allows industrialized agriculture to push out everything else.

"A public policy intervention that promotes organizational diversity in agriculture would seem to be needed," conclude Lyson and Welsh. "In this vein, anti-corporate farming laws provide one model."

The study was supported by Friends of the Constitution, a Nebraska coalition that is working to keep that state's anti-corporate farm law in place. For a copy of "Anti-Corporate Farming Laws, the 'Goldschmidt Hypothesis' and Rural Community Welfare," log onto <http://www.i300.org/> or contact the Friends of the Constitution at 1813 250th Street, Elmwood, NE 68349; phone: 402-781-2098.

What's on your mind?

Got an opinion?
Comments?
Criticisms? We like to
print letters,
commentaries, essays
and poems on
issues we cover. Contact:

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Protect Our Water gets mixed results at Minn. Legislature

In 2001, the Land Stewardship Project joined the Minnesota Environmental Partnership (MEP), a coalition of 79 state and local environmental and conservation groups, in supporting the Protect Our Water initiative. This campaign asked the 2002 Minnesota Legislature to support several common sense proposals that would help protect and restore the state's rivers, lakes and drinking water.

Protect Our Water met with mixed results during (and after) the session:

- In March, Minnesota Governor Jesse Ventura signed the Citizen Monitoring Law. This Protect Our Water policy initiative will make it possible for MEP member organizations to work with the Minnesota Pollution Control Agency, other state agencies and regional and local entities to develop a more vibrant network of monitoring and assessment in the state.

- In April, another Protect Our Water proposal was signed into law by the governor. The phosphorus-free fertilizer bill bans the presence of the nutrient in lawn fertilizers sold in the Twin Cities Metropolitan Area. Non-metro area residents could use lawn fertilizers with 3 percent phosphorus. The first-in-the-nation law does not affect agricultural fertilizers.

- However, on May 22 Gov. Ventura vetoed almost all of the Protect Our Water bonding initiatives, including funding for the remodeling of an alternative swine facility (see page 7), streambank restoration and protection, Reinvest in Minnesota (RIM), and fisheries acquisition.

"We are stunned at the message this sends all Minnesotans who care about the water they drink and the waters in which they fish, boat and swim," says John Curry, MEP Government Relations Chair.

For more information on MEP and the Protect Our Water initiative, contact Katie Person in LSP's Twin Cities office at 651-653-0618 or log onto www.protectourwater.info. □

Foreclosure 20th anniversary June 21-23 in Milan, Minn.

In 1982, a group of farmers, residents, business people and filmmakers came together in western Minnesota to organize and tell a story. The result was *Foreclosure*, a special film about the challenges facing family farmers. During three days in June, the Land Stewardship Project will join with others to observe the 20th anniversary of the making of this film, and to celebrate the influence it created. (This film plays a role in LSP's 20 year life as well: it was during the film's Twin Cities premiere that director Jim Gambone introduced LSP co-founder Ron Kroese to Patrick Moore, who is now an organizer in western Minnesota. The rest, as they say, is history.)

→ **June 21.** There will be a film showing and reunion for the cast, crew and community members involved with the original production. This will begin with a 6 p.m. potluck supper at the Kviteseid Lutheran Church in Milan, Minn. A 7:30 p.m. showing of *Foreclosure* at the Milan Elementary School Gym will follow.

→ **June 22.** There will be an "All Ages Community Conversation" at the Kviteseid Lutheran Church, beginning at 10 a.m. This intergenerational dialogue, which will be themed "The Future of Family Farms is in Our Hands," is being developed by *Foreclosure* director Jim Gambone in partnership with LSP. At 7 p.m. there will be a discussion session with the film's original cast and crew at the Milan Elementary School Gym. Following will be a *Foreclosure* screening for the public (\$3 admission fee or free with an original *Foreclosure* button). At 8:30 p.m. there will be music and refreshments at the Milan Legion Hall.

→ **June 23.** At 10 a.m. there will be an outdoor ecumenical service at the Milan School Playground.

Besides LSP, other sponsors of these events are Lac qui Parle Valley Community Education, City of Milan, Institute for Agriculture and Trade Policy, the Southwest Minnesota Foundation and the

West Central Regional Sustainable Development Partnership.

To confirm your attendance, or for more information, call 320-734-4411, or e-mail cityofmilan@fedteldirect.net. Watch for updates at <http://milan.govoffice.com>. □

LSP to develop 'Buy Local' food initiative

The Land Stewardship Project has been selected to develop a community-based "Buy Local" food marketing campaign in western Minnesota over the next two years. Through the Pride of the Prairie initiative based in LSP's Montevideo office, this Buy Local campaign will nurture strong regional markets for locally grown food.

LSP is one of 10 organizations chosen as part of a national Buy Local initiative supported by Fires of Hope, a national nonprofit organization dedicated to promoting a community-based food system that is environmentally, economically and socially sustainable.

The Buy Local campaigns will utilize lessons learned from the "Be a Local Hero, Buy Locally Grown" effort, supported by Fires of Hope and implemented by Community Involved in Sustaining Agriculture, a nonprofit organization dedicated to sustaining agriculture in western Massachusetts. In an independent evaluation, 78 percent of the area residents polled recalled the Local Hero campaign. Of those, 65 percent reported that the campaign influenced them to buy locally grown food. Further, 70 percent of participating farmers reported increased sales after the campaign began.

"LSP's dedication to sustainable agriculture make it an obvious choice," says Timothy Bowser, Executive Director of Fires of Hope. "We believe LSP's efforts will ultimately lead to vibrant, community-based farming and food systems in Minnesota that are ecologically sound, economically viable and socially responsible."

For more information on Pride of the Prairie and the Buy Local campaign, contact Audrey Arner, Lynn Mader or Terry VanDerPol at 320-269-2105. □

Web site updates

If you are a current LSP member and would like to be notified of updates and additions to the LSP Web site, contact Tara at tara@landstewardshipproject.org with your name and e-mail address. □



Factory farm organizing LSP members fight factory farms throughout Minn.

Lac qui Parle County— Environmental review ordered

Siding with Land Stewardship Project members in a March 6 ruling, Minnesota District Court Judge Peter Hoff overturned the Lac qui Parle County Commissioners' decision to deny a citizen petition calling for an Environmental Assessment Worksheet (EAW) on a proposed large-scale hog operation.

Hoff ruled that the County Commissioners' decision to deny the petition for an EAW was "arbitrary and capricious" and ordered an EAW to be completed before the controversial project moves forward. This ruling comes on the heels of a similar ruling in January by a Waseca County District Court overturning Waseca County's decision to deny an EAW petition on a factory hog operation.

The industrial style hog facility proposed for Lac qui Parle's Providence Township is designed to house 3,000 finishing hogs, which is equivalent to 900 animal units. Minnesota law mandates environmental review at 1,000 animal units. However, a county is required to order an EAW for a proposed operation that is under 1,000 animal units if it poses a threat to the environment. Residents in Providence Township believe the proposed factory farm facility would pose a threat to the area's environmental and human health. Thirty-five farmers and rural residents submitted a petition requesting that the county perform a discretionary EAW on the proposed project under Minnesota law. The county denied the petition on June 19, 2001.

"Judge Hoff's ruling validates what we've said all along—that there may be the potential for significant environmental and health-related impacts if this project progresses," says Deb Peterson, an LSP member and neighbor to the proposed feedlot. "Hopefully, this ruling will force our county and other counties to take neighborhood concerns and EAW petitions seriously."

Jim Peters, attorney for the plaintiffs,

says this ruling should help promote enforcement of the clear standard that counties and the Minnesota Pollution Control Agency (MPCA) should follow when deciding whether to require EAWs.

"If a petition for an EAW contains material information about the potential for significant environmental impacts, then an EAW must be ordered. That way the public has a forum for commenting on the project and governmental decision-makers will have the benefit of those comments," Peters says. "The county board violated clearly established law and acted arbitrarily."

Peterson questioned why the MPCA did not step in and give the county direction. Lac qui Parle County, like many rural counties in Minnesota, has authority to regulate feedlots through a delegation agreement with the MPCA. The MPCA is required to monitor these counties to make sure they are following state rules.

"MPCA carries the responsibility along with the county when they delegate authority," says Peterson. "The MPCA needs to look at how it monitors feedlots and delegate authority to counties in Minnesota." □

For a copy of the ruling, contact Bobby King at the Land Stewardship Project, 507-523-3366.

Goodhue County—Farmers demand environmental review of factory farm

Members of the Land Stewardship Project have filed a court challenge to the Goodhue County Board of Commissioners' decision not to order an Environmental Assessment Worksheet (EAW) on a controversial turkey confinement proposed in southeast Minnesota's Pine Island township. The proposed turkey operation would be a contract operation for the Jennie-O Turkey Store Company, and would house 35,000 turkeys. Thirty-eight neighboring farmers and rural residents submitted a petition asking the county to order an EAW. On May 7 the Goodhue County Board of Commissioners denied the petition.

Chief among the concerns listed in the petition is that the proposed site is prone to flooding. The neighbors submitted pictures of the area under water from a July 1990 rain. The site is about 250 feet from Pine Island Creek.

"This is a bad site for a large corporate style farm," says Ed Gadiant, an LSP member and independent hog producer

who lives near the proposed site. "Farmers who have lived nearby their whole life know this site floods. We even submitted pictures that show the area under water." □

Winona County—Fight to strengthen ordinance continues

Land Stewardship Project members working to strengthen Winona County's feedlot ordinance had warned county commissioners of the possibility that a large factory farm would move into the area.

In January this warning came true.

Holden Farms, Inc. bought a recently permitted and constructed 960 animal unit hog operation near St. Charles, in Winona County. Holden Farms ranks 21st on the list of the largest factory style hog producers in the nation with 28,000 sows (up from 22,000 in 2000), according to *Successful Farming* magazine.

The factory farm, located just south of St. Charles, is permitted for 3,200 finishing swine. The farm is in the watershed of nearby Whitewater State Park, which is one of the area's premier destinations for trout fishing.

LSP has asked the county commissioners to adopt the following feedlot ordinance changes:

1) Issue county Conditional Use Permits (CUP) to the operator and not to the site, so that transferability other than to an immediate family member would not be allowed.

2) Restore Winona County's old animal unit values. The new animal unit values in effect allow hog and poultry operations to be much larger before they need a CUP.

3) Require large operations to demonstrate the financial ability to correct violations and clean up manure spills by showing adequate net worth.

LSP members in Winona County are continuing to press the county for these changes. □

Thanks Willie

Winona County Land Stewardship Project members would like to thank musician Willie Nelson for his generosity. Nelson invited LSP members who have been working on factory farm issues in Winona County to his March 30 concert in the Twin Cities. The group had prime seats and backstage passes. Through his Farm Aid organization, Nelson has supported LSP's work through the years.

Alternative livestock production

Farmers discuss pork alternatives

For 15 years Jim VanDerPol raised hogs using farrowing crates. These box-like structures are considered the cutting edge of pork production, but the western Minnesota farmer didn't shed a tear when it was time to retire them.

"The best day of my life is when I took the Bobcat loader and pushed that junk out through the end of the building," VanDerPol told 50 farmers gathered in Granite Falls, Minn., on March 22.

The farmers were taking part in a special "Pig Power" meeting on alternatives in pork production and marketing, sponsored by the Land Stewardship Project. Many of the farmers participating in the meeting were active in the LSP campaign to end the mandatory pork checkoff. At a time when independent hog farmers face tough financial going, the meeting's presenters had a positive message: there are ways to produce hogs that are profitable, pleasant and good for the environment.

VanDerPol, for one, said he would never go back to the old method of pork production—working with the crates in a

are catching on, said Martin.

"A million hogs a year are raised in hoops in Iowa now. That's just a small percentage of Iowa production, but that's happened in just five years."

Some of the most exciting alternative swine research is taking place at the University of Minnesota's West Central Research and Outreach Center (WCROC) in Morris, said Martin. Such research has been made possible because farmers and organizations like LSP are pushing for more research in this area, he said. For example, the alternative swine research going on at Morris is the result of legislative funding that came about when LSP, farmers and other citizens lobbied for options other than large-scale factory farm production systems.

WCROC has four hoop houses set up: one for gestating sows, two for growing pigs and one for sorting and handling pigs. The Center's research priorities are, among other things, improving feed efficiency and investigating alternative feeds and bedding, according to Rebecca Morrison, a Sustainable Swine Production Systems Scientist. So far, research has shown that farms with diverse cropping systems that include small grains—and thus access to small grain straw—have an advantage raising hogs in deep-bedded systems.

"The key is you have to have access to good bedding and lots of it, especially in Minnesota," said Morrison.

The major disadvantage to the deep-straw systems is that the regular hauling of bedding can make for extra labor requirements, according to

Morrison. On the other hand, deep straw systems are less of a threat to the environment, better for the hogs, and produce a more pleasant working environment for farmers, said the scientist. They are also cheaper to set up: an Iowa State University study found that deep-bedded straw systems can be built for about a third of the per-pig cost of constructing a confinement operation.

Another advantage to alternative systems is they make it possible to raise antibiotic-free pork, said Julie Carlson, a farmer and pig buyer for Niman Ranch, a California-based natural meats company. Niman buys antibiotic-free pork from 200 farm families in seven states. □

Morris open house

Farmers and others interested in alternative swine production will have an opportunity to see the latest research initiatives at the West Central Research and Outreach Center in Morris, Minn., Aug. 1, from 10 a.m. to 3:20 p.m. The open house, which is sponsored by the University of Minnesota's Alternative Swine Task Force, will feature the facility's deep-bedded hoop house facilities. Speakers will include farmers, researchers and state legislators who helped make the research center a reality.

"This will be an opportunity for farmers and the general public to show their appreciation to legislators who helped gain funding for this unique research center," says Paul Sobocinski, a Land Stewardship Project organizer and farmer who serves on the Alternative Swine Task Force.

Lunch will be provided. To register or for more information, call Rebecca Morrison at 320-589-1711, or Wayne Martin at the University of Minnesota at 612-625-6224. □

Funding for swine facility vetoed

A proposal that would have provided funding to help remodel a conventional hog building into a deep-straw facility passed the Minnesota Legislature this spring, only to be line-item vetoed by Governor Jesse Ventura.

The initiative would have provided \$70,000 to convert a gestation building at the West Central Research and Outreach Center in Morris.

The Land Stewardship Project, the University of Minnesota's Alternative Swine Task Force and other groups helped push for the funding as part of the Minnesota Environmental Partnership's Protect Our Water legislative initiative (see page 5). Aware of the state's budget crunch, supporters of the project downsized their original \$300,000 request, which would have went toward the construction of a new facility. The \$70,000 would have helped refurbish an existing facility at the outreach center.

"This veto is particularly disappointing because we took extra pains to make it affordable," says Paul Sobocinski, an LSP organizer who raises hogs and serves on the Alternative Swine Task Force. "The governor shouldn't be going after budget-conscious initiatives that hold real potential for helping agriculture and the environment statewide." □



Farmers discuss swine production alternatives at a March meeting in Granite Falls. (LSP photo)

closed building was dirty, smelly and hard on the hogs. So a few years ago the family started seeking out alternative methods. Today, they raise hogs using pasture farrowing, as well as deep-straw bedding in two "hoop buildings"—open-ended structures made from stretched fabric and metal tubing.

Wayne Martin, coordinator of the University of Minnesota's Alternative Swine Task Force, discussed what research was being done to help farmers who were seeking alternatives. He said the bulk of the research is still focused on large-scale, expensive, confinement operations. However, there are some hopeful signs that lower cost alternatives



Policy office moves

The Land Stewardship Project's Policy Program office has moved. Its new address is **2919 42nd St. E., Minneapolis, MN 55406**. The phone number will remain 612-722-6377, and the fax number is 612-722-6474.

The Policy Program is looking for donations of items to help with the operation and upkeep of the new office. Namely, it needs a lawn mower, snow blower, shovel, broom, file cabinets, office chairs, folding chairs, wastebaskets, a freezer and cash donations.

The Policy Program is also looking for volunteers to help with clipping and filing news articles and other information, database entry for organizing campaigns, phoning, mailings, and other needs. Call 612-722-6377 for more information. □

LSP presentations

◆ The Land Stewardship Project was well-represented at this year's **Upper Midwest Organic Farming Conference**, held Feb. 28 to March 2 in La Crosse, Wis. More than half-a-dozen LSP members gave workshop presentations on various sustainable farming techniques. In addition, LSP organizer Karen Stettler talked about getting started in farming during a session that was attended by more than 60 people. Stettler coordinates LSP's Farm Beginnings Program in southeast Minnesota.

Audrey Arner, an LSP organizer who farms near Montevideo, in western Minnesota, gave a keynote address during the conference. Arner shared stories from her farming and community organizing experience, exploring core values that reside in the heart of organic agriculture. Look for an excerpt of Arner's talk in a future issue of the *Land Stewardship Letter*.

In recent years, the Upper Midwest Organic Farming Conference has evolved into the premier meeting of its kind in the nation. For information on the 2003 conference (Feb. 27 to March 1), call Faye Jones at 715-772-3153 or log onto www.mosesorganic.org.

◆ LSP Executive Director George Boody spoke about agricultural policy and local food systems during the national **Kellogg Food and Society**

Initiative Conference, April 21 to 24, in Denver, Colo. Boody gave presentations on LSP's work promoting the Conservation Security Program and the Midwest Food Alliance.

◆ LSP and 1000 Friends of Minnesota made a joint presentation at the **ReVisioning: Building Community for a Sustainable Future** conference April 26 at Macalester College in St. Paul.

Smart growth, beginning farmers, computer visualizations, erosion reduction and making money shaped the workshop, which was entitled, "Sustaining Lands in Urban Spaces."

◆ As part of the **Living Green Expo** on April 27, LSP staff presented data that correlates an eater's roast beef to the bobolink, and farm-fresh cheese to clean water. "The Landscape of Your Plate" presentation was part of the Food and Farm Festival at the Expo.

◆ **Creating our Future: a Workshop to Get Us There**, was co-sponsored by the Land Stewardship Project Feb. 23 in the southeast Minnesota community of Frontenac. The day was geared to those in or near the Wells Creek watershed who care about the future of area towns, farms and development. Core issues addressed included growth and the economics of

farming, as well as bridging urban and rural concerns.

The Wells Creek Watershed Partnership was established in 1994. The Wells Creek watershed drains directly into the Mississippi River and its residents are in the midst of dealing with how to balance environmental protection with land use demands such as farming, residential and commercial development, and tourism.

LSP sponsored the workshop with the Watershed Partnership and the Institute for Agriculture and Trade Policy. For more information, contact Caroline van Shaik in LSP's Twin Cities office at 651-653-0618 or caroline@landstewardshipproject.org. □

LSP on the radio

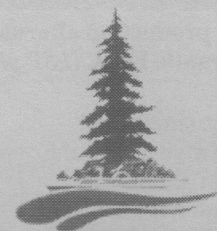
On April 22, Dana Jackson was a guest on Minnesota Public Radio's Midmorning program during a special Earth Day-themed show. Jackson discussed *The Farm as Natural Habitat* book (see page 18) and fielded call-in questions related to agriculture, food and land stewardship. You can listen to a recording of the hour-long show at <http://news.mpr.org/programs/midmorning/listings/mm20020422.shtml>. □

Give to LSP through the Minnesota Environmental Fund

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 toward:

- promoting the sustainability of our rural communities and family farms;
- protecting Minnesotans from health hazards;
- educating citizens and our youth on conservation efforts;
- preserving wilderness areas, parks, wetlands and wildlife habitat.

A PROUD MEMBER OF



MINNESOTA Environmental Fund

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, contact Katie at LSP's Twin Cities office by calling 651-653-0618 or e-mailing kperson@landstewardshipproject.org.

Staff update

Britt Jacobson is leaving the Midwest Food Alliance (MWFA) to return to her home state of North Dakota. As the



Britt Jacobson

Assistant Market Manager for the MWFA during the past year and a half, Jacobson played a key role in coordinating the program's retail program. MWFA, a sustainable certification and labeling program,

is a joint project of the Land Stewardship Project and Cooperative Development Services.

Daniel Ungier is working as an intern for the MWFA.

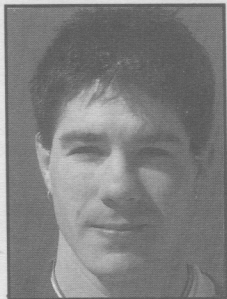
Ungier, a native of Corvallis, Ore., is majoring in environmental studies and international studies at Macalester College. He also

works as a farm assistant/agriculture intern at Dodge

Nature Center in St. Paul, Minn. During his internship with MWFA, Ungier is

conducting farmer interviews, writing farmer profiles and assisting with market research.

Adam Warthesen is serving an organizing apprenticeship with LSP's Policy Program through the Organizing Apprenticeship



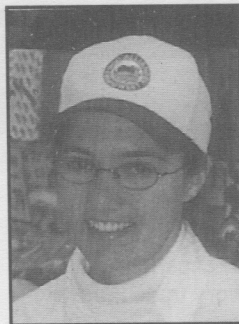
Adam Warthesen

Project (OAP). Warthesen has been serving an internship with LSP since February, fulfilling a graduation requirement for a major in environmental studies from Bemidji State University.

From now until November, he will be paid by OAP to train as an organizer, and will be mentored by LSP staff member Mike McMahon. Warthesen will also participate in monthly OAP training retreats.

Warthesen grew up on a farm near Theilman, in southeast Minnesota.

Leslie Bardo is volunteering with LSP's Policy Program. Bardo coordinates the Home Gardening Project at the



Leslie Bardo

Sustainable Resources Center in Minneapolis. She is pursuing a master's degree in environmental education in an agricultural setting at the University of Minnesota-Duluth. □

LSP farm families recognized by U of M

Three Land Stewardship Project farm families recently received Farm Family of the Year awards for their prospective counties. The awards are given annually by the University of Minnesota to recognize successful, innovative farm families. LSP members who received recognition for 2002 include **Dennis and Mary Gibson** of Chippewa County, **Andy and Julie Hart** of Olmsted County and **Dale and Carmene Pangrac** of Winona County. □

Multiple Benefits report still available

Copies of *The Multiple Benefits of Agriculture: An Economic, Environmental & Social Analysis* are still available from the Land Stewardship Project's Twin Cities office. This report shows how establishing more perennial plants, multiple crop rotations, wetlands and other features of a diverse landscape can produce significant environmental and economic benefits from working farmland. The study, which LSP coordinated, also found that Minnesota residents on average are willing to pay more than \$200 per household annually for such benefits.

The price of the 52-page publication is \$12 (\$12.78 for Minnesota residents; LSP members receive a 10 percent discount), plus \$3 shipping and handling. A brief executive summary of the report is free. Send a check payable to LSP to: Louise Arbuckle, LSP, 2200 4th St., White Bear Lake, MN 55110. For credit card orders, or for more information, call 651-653-0618, or e-mail lsplibl@landstewardshipproject.org.

A free pdf version of the report can be downloaded from the Land Stewardship Project Web site at www.landstewardshipproject.org. An

executive summary of the report is also available on the Web site. □

New LSP logo

As part of the Land Stewardship Project's 20th Anniversary Celebration, we are updating the LSP logo to better reflect our mission, past accomplishments and future goals. If you are a graphic designer or know of



someone who might be interested in helping with this redesign, please contact our Twin Cities office at 651-653-0618 or lsplibl@landstewardshipproject.org. □

Murray new MISA director

Helene Murray has been appointed director of the Minnesota Institute for Sustainable Agriculture (MISA). For the past eight years, Murray was the coordinator of MISA.

Murray is an adjunct professor in the University of Minnesota's Department of Agronomy and Plant Genetics, and is on



the faculty of the MacArthur Interdisciplinary Program on Global Change, Sustainability and Justice. Murray succeeds Don Wyse, who resigned as MISA's director in April 2000.

The Land Stewardship Project and other members of the Sustainers' Coalition helped start MISA in 1992. MISA is recognized nationally as an innovative experiment creating links between a land grant university and the public.

For more information on MISA, call 800-909-6472 or log onto <http://www.misa.umn.edu/>. □



Food & Farm→→→→Connection

MWFA holds 1st annual meeting

Non-sensual characteristics of food are increasingly influencing people's grocery buying decisions, according to Kevin Edberg, Executive Director of Cooperative Development Services.

"An example of a non-sensual characteristic is 'I care about the people who produced this food,'" Edberg told the 20-some farmers who attended the first annual meeting of the Midwest Food Alliance, held Feb. 12 in Bloomington, Minn. "The Japanese call it 'food with a human face.'"

Edberg was the keynote speaker at the day-long meeting, which offered opportunities for farmers who have received MWFA's seal of approval to get updates on consumer preference surveys as well as to participate in discussions featuring retailers who are carrying MWFA-approved products. Paul Hugunin of the Minnesota Department of Agriculture's Minnesota Grown program also talked about the role the MWFA seal can play in direct marketing.

The MWFA is a sustainable food certification and labeling initiative of the Land Stewardship Project and Cooperative Development Services. For more information, contact Jim Ennis at 651-265-3682, or Ray Kirsch at 651-653-0618. For a list of retailers carrying MWFA products, log onto www.landstewardshipproject.org. □

MWFA marketing coordinator needed

Midwest Food Alliance has an immediate opening for a marketing coordinator position. Responsibilities include: a) assisting in the development of annual marketing and consumer education plans and strategies; b) implementing marketing plans that effectively promote the MWFA seal of approval and MWFA-approved growers, c) coordinating retail partnerships and promotions, and d) coordinating marketing support materials for MWFA-approved growers. Qualifications of potential candidates include: a)

excellent verbal and written communication skills; b) experience developing and implementing successful consumer education programs; c) experience in the

grocery trade industry (helpful); d) energy, enthusiasm, and a commitment to the project's goals.

The position is based in St. Paul, Minn., with some travel required. Salary is competitive, depending on experience, with excellent benefits and flexible work schedule.

The position remains open until a suitable applicant is found. To apply, please submit a resume and a letter of introduction of no more than two

pages to Jim Ennis, Project Director, Midwest Food Alliance, Blair Arcade West, Suite Y, 400 Selby Avenue, St. Paul, MN 55102. □

Volunteers needed for food demos

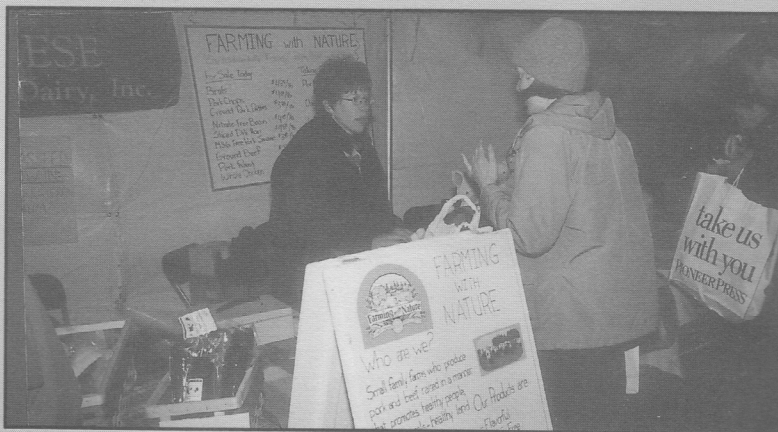
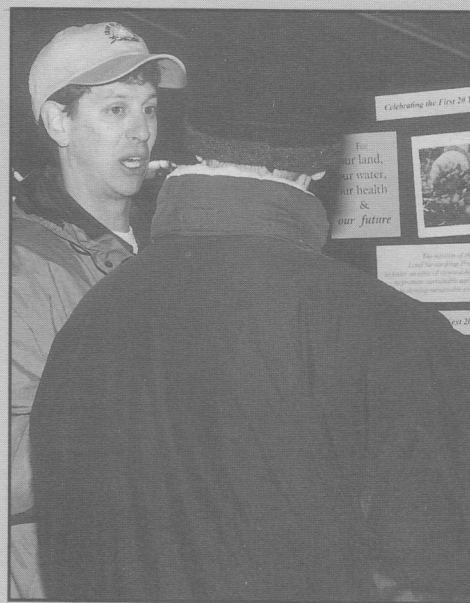
The Midwest Food Alliance is looking for volunteers to help with in-store demonstrations of local, sustainably-produced foods. Past use of volunteers has proven to be a very effective way of reaching out to consumers who are seeking information on the MWFA seal of approval. MWFA will provide training for volunteers, who are needed from July through November in the Twin Cities, St. Cloud and Rochester. If you're interested, call the MWFA at 651-265-3678 and ask for Vicky. □



Festival attracts thoughtful shoppers

Consumers looking for sustainable sources of local food braved blustery weather April 27 to attend the Community Food and Farm Festival in St. Paul, Minn. Farmers who direct market produce, meat and dairy products were on-hand to answer questions about their production methods.

Below: Lisa Klein discusses the meat products her farm produces in southeast Minnesota. **Right:** Volunteer Greg Bernstein of Minneapolis talks about the importance of membership in LSP. For a listing of farmers who sell food direct, log onto www.landstewardshipproject.org or call 651-653-0618. (LSP photos)



A mountain of experience in molehill land

Richarda Ruffle

I grew up in the White Mountains of New Hampshire, and although I have since traveled and experienced different places, I have always lived among mountains. Naturally, in choosing a graduate school to attend in the fall of 2000, I was drawn to the University of Montana, where snow-capped peaks rise on the horizon in every direction from the university. As an Environmental Studies student, I found my niche in community organizing, focusing on sustainable agriculture and the promotion of local food systems. I earned a fellowship for my second year of study, which included funding for a 10-week internship at a nonprofit organization of my choice. When my adviser suggested the Land Stewardship Project, I agreed that it sounded like a great match for me. I hesitated for a moment, though; could I really survive in the prairie, without mountains rising above me, protecting me? At the end of May 2001, however, I put my rock climbing and hiking gear in storage, my hesitations aside, and drove from the mountains in Montana to the flat, open prairie of western Minnesota.

I have to admit that when I arrived in Montevideo and looked around at what would be my home for the next three months, I felt a flash of panic. No mountains, no forested hills.... instead vast, stretching fields, and horizon. Lots of it. So much space. Yet I barely had time to dwell on this before I began work.

One of my first days in Minnesota I participated in two farm tours that had been organized through LSP's Farm Beginnings program. Farm Beginnings acknowledges the difficulties with establishing a farm, and it draws upon the idea that farmers do best when they are able to work together and support one another in their agricultural endeavors.

The first tour was at The Lamb Shoppe, where Connie Karstens and Doug Rathke were showing their sheep farm to others interested in livestock farming and rotational grazing. We followed the farmers through their pastures, sheep skittering away and newborn lambs wobbling on skinny legs. Connie and Doug explained the details of their

farming business as we walked. They frequently stopped to point out different plants, birds, or other natural phenomenon on their farm. I was impressed with these farmers' attention to detail, the obvious joy they took in learning the intricacies of nature, and the role they as farmers played in nurturing this diverse environment.

After the sheep farm tour, I hustled off to catch the end of another tour at MOM's (Minnesota Organic Milk), a dairy farm where they process milk, ice cream and cheeses. I arrived just in time: the vanilla ice cream mix was being poured into cups and topped with a bit of root beer—a deliciously unique twist on the root beer float delicacy. As I sipped this sweet, creamy treat and listened to the owners talk with student-farmers about marketing techniques they had learned, I realized I had caught the excitement around me. It was hard not to. Not only was there an evident enthusiasm for the details of farm life, of working with animals and the land, there was also a great deal of excitement about sharing knowledge with others. I sensed this summer would be different than any other. Instead of looking up at grandiose mountains, I would be paying closer attention to the land (and the people) right in front of me.

I consumed much more enthusiasm throughout the summer. Along with the Farm Beginnings program, I focused on Pride of the Prairie, a project to encourage the purchase of more local foods in the western Minnesota area. Quite honestly, I have never thought so much about food before in my life. As I helped develop a consumer survey which asked questions about the food people consume, their knowledge of where it came from, and how their values are reflected in the food they eat, I could not help but ask myself the same questions. How far has my food traveled? How many resources were used in getting this food to me? Was the food produced by farmers? Or was my food touched mainly by machinery on a factory farm? When I got my vegetables from a friend's farm nearby, I knew the answers to all these questions, and the food tasted richer. I felt good eating it, as if my body



was not just nourished by food, but also by my friends, by the community of which I was a part.

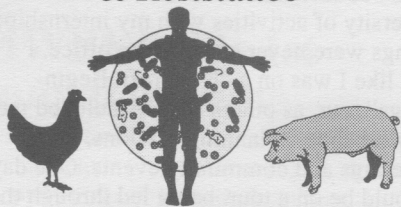
I was fortunate to be involved in a diversity of activities with my internship; things were never static in the office. I felt like I was on a "Nonprofit Beginnings" tour, as others at LSP included me in workshops, planning sessions, group meetings and community events. One day I could be on a tour, being led through the pastures and fields of a local farmer, and the next I could be talking on the phone with someone across the country, networking and sharing ideas about local foods system successes, or putting together a brochure, or interviewing someone about their food values and preferences. Like the mentors on the farm tours, other LSP organizers answered my questions and never hesitated to share with me their experiences, ideas, and even their homes, gardens and ponds.

In the middle of my summer here, I went with friends to visit an historic mill town. The drive there was beautiful, we passed tall cornfields with feathery tips shimmering, through river valleys, and along the shores of clear, blue lakes. We stopped at the Ordway Prairie and stepped out to take in the view. Stretched out before us were wildflowers scattered across various shades of green, tall and softly swaying grasses, and hills so gentle that they had the appearance of waves rolling out to the sky. The beauty was made up of all the small things, all the subtle things. Not just one great reaching mountain peak, but a combination of beauties. This is what my experience in Minnesota was like.

For the summer, I was a part of the prairie in western Minnesota, where every little piece, every small living thing, is a part of something that is startlingly beautiful. Although the mountains are home for me, the prairie is where I discovered all the riches a community offers, and where I learned to see beauty not in the grand and obvious, but rather in the subtle details of the land. There is a quote that hangs in the LSP office in Montevideo, paraphrased from Hans Voigt. It reads: "May friendship and trust reign amid the individuals who work in this place. May the elemental beings of the prairie incline themselves in camaraderie in this work. And then to the inquirer, reverently approaching nature, will be revealed what is now hidden." □

Richarda Ruffle served an internship with LSP's western Minnesota office during the summer of 2001.

Antibiotics, Agriculture & Resistance



...Antibiotics from page 1

these wonder drugs had other uses. In 1949, Thomas Jukes was working in a private laboratory when he and other scientists discovered by accident that feeding antibiotic residues to chicks increased weight gain 10 to 20 percent above normal. At first it wasn't clear how this boost came about. But now it is widely believed that, among other things, antibiotics suppress bacteria that reduce efficiency in the digestive system, thus increasing weight gain with less feed.

The antibiotics also help keep animals healthy enough to gain weight—that's particularly important in less than optimal living conditions. Confining animals their entire lives results in health problems galore. For example, dust in swine facilities—83 percent of sows are raised in total confinement, and 82 percent of small pigs are placed in total confinement nurseries, according to the USDA—contains particles of feed, feces, dried urine, swine dander, pollen, insect parts, mineral ash, mold and bacteria. This creates respiratory problems in hogs, resulting in a form of pneumonia in some cases. That's why respiratory diseases are the biggest cause of pig mortality. Feeding low levels of antibiotics like tetracycline can boost the immune systems of pigs, keeping them healthier and increasing their feed efficiency.

"It was the discovery of the effectiveness of the drugs as feed additives in these conditions which led to the concentration of the meat industry," said Jukes in a 1984 interview. "For the first time, farmers could confine a large number of animals and still keep them healthy."

Indeed, there's been a lot of debate in recent years as to what major technological innovation helped make large-scale, total confinement, factory farming possible. Lagoons, pits and pumps to handle millions of gallons of manure? Confinement buildings that use computer managed total climate control to create a yearlong spring inside? Yes, those and

many other technologies have made confined animal feeding operations a reality. But it was the introduction of antibiotics—both as disease fighters and growth promoters—that made raising large numbers of animals in closed quarters consistently viable.

By 1954, U.S. farmers were using roughly 490,000 pounds of antibiotics a year in livestock feed. Six years later that figure was over one million pounds. In 1984, it was between 12 and 15 million pounds. Today, U.S. livestock are fed more than 24 million pounds of antibiotics for purposes other than treating disease, according to the Union of Concerned Scientists. Many of these drugs are the same, or are closely related to, antibiotics used in human medicine. For example, amoxicillin, ampicillin, erythromycin, neomycin, penicillin and tetracycline are all used to treat human infections, as well as in livestock farming. In some cases animal agriculture antibiotics are not used in human medicine, but hold the potential for treating people down the road—unless resistance destroys that potential.

The impacts on feed efficiency alone have been tremendous. In 1928, the average broiler chicken required 112 days and 48.4 pounds of feed to reach market weight. By 1990, broilers required 42 days and less than 8.8 pounds of feed. Other technological and management factors have played a part in speeding a broiler's trip to the supermarket, but there's no doubt antibiotics have been key, particularly as poultry operations become larger and more crowded.

In hogs, antibiotics can produce a 6 to 20 percent increase in growth from weaning through about 50 pounds, according to the University of Kentucky. Subtherapeutic antibiotics can add \$1.26 per pig in profit, according to a University of Illinois study. That may not sound like much, but it adds up when a farmer is marketing several thousand pigs a year.

"The antibiotics are a great equalizer in the pig," says Tom Burkgren, Executive Director of the American Association of Swine Veterinarians.

Antibiotic use is present in all aspects of livestock production: poultry, dairy, beef and pork. In the swine industry alone, antibiotics are currently used in almost 90 percent of starter feeds, 75 percent of grower feeds and more than 50 percent of finishing feeds.

It's important to differentiate between "therapeutic" and "subtherapeutic"—also called "nontherapeutic"—use of antibiotics. The former is when a farmer treats a

specific disease for a short amount of time with a high dosage of antibiotics. In theory, once the animals get better, the drug is pulled. With subtherapeutic use, the animals receive low dosages for an extended period of time, often for months. Such low level, long term dosages are fed either as a prophylactic or as a growth promoter. But this is where things get fuzzy; sometimes it's hard to tell where the disease prevention traits of an antibiotic stop, and the growth boosting begins.

For example, U.S. pork producers are currently permitted to use 29 over-the-counter antibiotics in feed. Of these, five are listed only as growth promotants, while seven are listed as both for growth promotion and "various infections," and 17 only for infections, according to a 1999 report produced by the Center for Agricultural and Rural Development at Iowa State University.

And what was meant to be a short term treatment can turn into something else.

"Sometimes a farm has a disease problem and they add something to the feed and never get around to taking it out," says Bo Norby, a research associate at Michigan State University's College of Veterinary Medicine.

Antibiotics in feed have been a boon to large operations that are maximizing space and feed usage while relying on employees who don't have the time or training to deal with individual animals.

But subtherapeutic antibiotic use is not exclusive to mega-scale farms raising tens of thousands of animals. One southwest Minnesota farmer who produces just under 2,000 head of hogs a year says although he doesn't crowd the animals in total confinement, he feels the pressure to use subtherapeutic dosages because of the increased disease risk posed by larger, more concentrated operations in the area. Also, antibiotics help reduce feed usage and shorten the time it takes to get pigs to market.

"Time is money," he says.

Volume, volume, volume

In 1963 several British cattle operations developed *Salmonella* bacteria that antibiotics had a hard time killing. This and other incidents helped launch nearly four decades of investigation into whether the use of antibiotics in livestock was creating superbugs—bacteria that could not be eliminated with regular antibiotics.

There is a precedent: overuse of

Antibiotics see page 13...

Antibiotics by doctors treating humans has already created such a reservoir of resistant bacteria. As many as one-third of all prescriptions in this country are unnecessary. Prescribing an antibiotic for a cold, for example, doesn't help, since a cold is a viral, not a bacterial, illness. In addition, health care professionals are concerned about patients who don't take a full course of antibiotics, saving some for later when they medicate themselves. This results in bacteria being exposed to lower levels of antibiotics, providing ample opportunities for resistance to develop. Between 1989 and 1999, American adults visited doctors more than 6.5 million times complaining of a sore throat, according to a study published in 2001 in the *Journal of the American Medical Association*. In over 70 percent of those visits, the patient was treated with antibiotics, although only 5 percent to 17 percent of sore throats are caused by bacterial infections (antibiotics are only effective on bacterial infections). Then there's the antibacterial craze that's saturating the consumer goods market these days. People can now buy soaps, toys and telephone pads that contain the kind of antibacterials formerly found only in the hands of medical professionals.

The ubiquitous nature of antibiotics today is a recipe for developing superbugs. Resistance to antibiotics evolves when bacteria are exposed to chronic, low levels of antibiotics. Such exposure selects for bacteria that can resist being killed by antibiotics. Bacteria have a generation time that can be measured in minutes, and a single resistant bacterium can spawn more than a million progeny in less than a day. And bacteria jumps species barriers—from animals to humans, for example.

Hospitals, nursing homes and other health care facilities are finding old standby antibiotics like penicillin simply don't work. In 1974, 2 percent of *Staphylococcus aureus* (staph) bacteria in U.S. hospital patients were resistant to drugs. Now half resist being killed by antibiotics, according to the Centers for Disease Control and Prevention. This results in extra, expensive, measures such as the use of particularly potent microbe killers and limited contact between visitors and patients. But sometimes it's a losing battle. In the U.S. alone, some 14,000 people die annually from drug-resistant bacteria that infect them in hospitals.

"We take a lot of responsibility for this problem," says Brendan Cullinan, a

family physician in the western Minnesota community of Montevideo, referring to the medical community. "I've had days when I had thought we're going to go back to the 1920s with all these superbugs. That's not all the time I think that. Those are my dark days."

The role of agriculture

But there is mounting evidence that antibiotic use in livestock is also to blame for drug resistance. The sheer volume of low-level antibiotic usage in livestock farming creates the perfect environment for the evolution of superbugs.

In January 2001, the Union of Concerned Scientists released *Hogging It: Estimates of Antimicrobial Abuse in Livestock* (http://www.ucsusa.org/food/hogging_exec.html). The study tried to accomplish what had not been done before: come up with an accurate assessment of the amount of antibiotics in this country that go to promote growth in livestock. What they determined is that every year U.S. livestock producers give 10.5 million pounds of subtherapeutic antibiotics to poultry, 10.3 million pounds to hogs, and 3.7 million pounds to cattle. That's compared to *three million pounds* of antibiotics that are used for human medicine. The Union of Concerned Scientists' estimates are almost 40 percent higher than previous tallies of antibiotic use in livestock. In 2000, the Animal Health Institute, a livestock pharmaceutical trade group, said that 17.8 million pounds of antibiotics are used in animals (this estimate included therapeutic as well as subtherapeutic antibiotics). However, the trade organization has not disputed *Hogging It's* revised estimates.

Hogging It concludes that low-level, subtherapeutic use accounts for 70 percent of the total antibiotics given to livestock. The group also estimates that overall use of animal antibiotics for subtherapeutic uses has risen by 50 percent since 1985. (In March, the USDA's Centers for Epidemiology and Animal Health released a survey of hog farmers showing that 63.7 percent of antibiotics given to grower/finisher pigs were for growth promotion.)

The honeymoon is over

But do all those drugs produce antibiotic-resistant bacteria? Computer modeling shows that using antibiotics for livestock production is significantly shortening the "honeymoon period" when antibiotics are effective for humans, according to a University of Maryland paper published in April.

In 1999, the *New England Journal of Medicine* published the results of a Minnesota study where researchers concluded that the use of the antibiotic fluoroquinolone in poultry was creating a reservoir of resistance, making it difficult to treat with antibiotics a human ailment called *Campylobacter*—a common illness that causes diarrhea and a fever. In fact, the researchers found an eightfold increase in drug-resistant food poisoning among Minnesotans directly followed the approval, in 1995, of the drug for livestock. In Denmark, growing bacterial resistance to fluoroquinolone correlates with its use in the livestock industry there as well. The antibiotic is one of a family of drugs that have become physicians' first line of defense as penicillin loses its effectiveness. Fluoroquinolone is also very similar to Cipro, a drug that is used to treat human anthrax. Cipro's value has risen considerably in the wake of the Sept. 11 attacks. Back in 1995, health care officials, including the U.S. Centers for Disease Control and Prevention, opposed approval of the antibiotic for livestock use. But the poultry industry prevailed, saying they needed the powerful drug to treat their flocks for *Escherichia coli* (*E. coli*).

On Oct. 4, 2001, the *New England Journal of Medicine* yet again sounded alarm bells about antibiotic resistance. In this case, it reported that antibiotic-resistant *E. coli* had made it harder to treat urinary tract infections suffered by women in California, Michigan and Minnesota. The implications were that since the women were from three geographically diverse areas, the multi-drug resistant bacteria were spread via an environmental factor, such as contaminated food. On Oct. 18, 2001, the medical journal fired a three-study scientific broadside at the use of antibiotics as growth promotants in livestock. One study found that 84 percent of the isolated salmonella found in supermarket chickens was resistant to a potent combination of antibiotics, qualifying the bacterium as a superbug. Another study found resistant bacteria in 17 percent of chickens purchased in four states. The final study described how antibiotic-resistant organisms can survive human digestion and even multiply.

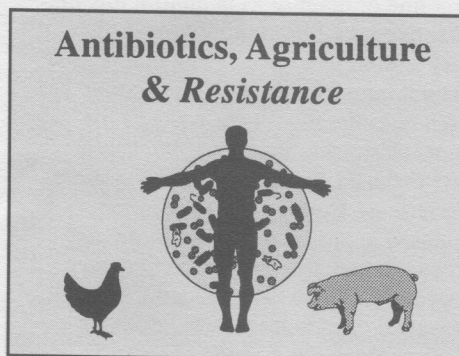
The *New England Journal of Medicine* put an exclamation point on these studies with an editorial by Sherwood Gorbach of the Tufts University School of Medicine. He concluded that these and other

Antibiotics see page 14...

studies are the "smoking gun" that the use of antibiotics as growth promotants are a threat to human health and should be banned. Professional health organizations such as the American Medical Association have joined in calling for such a ban.

Regulatory storm clouds

In some places, the concept of regulating the use of antibiotics in agriculture has gone beyond the editorializing stage. Several European countries have clamped down on the use of antibiotics as growth promoters. Among those nations restricting drugs in feeds is



Denmark, which controls 40 percent of the world pork market.

The European Commission has proposed a permanent ban on the use of antibiotics as an ingredient in feed by 2006. In 2000, the World Health Organization announced a similar goal.

And how has government in this country responded? In the 1970s, efforts to regulate the use of antibiotic feed additives on a national level were stymied by pharmaceutical, feedstuffs and large-scale livestock interests. But concerned lawmakers keep trying. On Feb. 27, Rep. Sherrod Brown of Ohio introduced a bill in the U.S. House that would phase out the routine feeding of medically important antibiotics to healthy farm animals within two years.

This spring the U.S. Food and Drug Administration announced a hearing on a proposal to ban use of fluoroquinolone in livestock. Bayer, the sole remaining manufacturer, is fighting it.

In Minnesota, a proposal was introduced during this year's state legislative session that would have prohibited putting low levels of antibiotics into feed. The proposal, which was introduced by Rep. Phyllis Kahn, failed 75-59. The Minnesota Senate passed an amendment by Sen. Jane Krentz that directs the state to study ways to preserve the effective-

ness of some antibiotics.

Such regulatory talk concerns the livestock industry, which maintains that antibiotic use doesn't just make livestock production easier—it has become critical in these times of shrinking resources and concerns about the environment. Mike Hannon, a senior technical services manager for Roche Animal Health, a pharmaceutical company, says antibiotics cut the amount of feed needed to produce a market weight hog by 24 pounds. If 100 million pigs are marketed annually in the U.S., that's a whole lot of feed saved, which translates into fewer acres needed for corn and soybeans, and 500 million pounds less manure produced each year, according to Hannon.

But arguments against any restrictions on antibiotic use are beginning to wear thin in the face of the mounting evidence, says Margaret Mellon, director of the food and environment program for the Union of Concerned Scientists.

"The industry is going to have to make some changes," she says.

One sign that it sees change on the horizon is that the U.S. livestock industry is starting to ask itself a hard question: can livestock be produced without subtherapeutic drugs?

"Sure we can produce hogs without antibiotics—we did it 50 years ago. Fortunately I wasn't around back then," quips the American Association of Swine Veterinarians' Tom Burkgren.

But Michigan State's Bo Norby isn't as quick to see the loss of growth

promoting drugs as a lifetime sentence to the Island of Archaic Agriculture. The veterinarian believes calls for the banning of subtherapeutic antibiotics in livestock go too far. However, he says it's time the industry took proactive steps to deal with a problem that could get out of hand. One key step would be to take alternative farming systems seriously.

Norby is in the middle of a research project that is comparing the amount of antibiotic-resistant bacteria present on conventional hog farms with those that use no antibiotics. Through his research, Norby has been on farms that are producing hogs without antibiotics, and doing it in an economically and environmentally sound manner. He says the key to reducing antibiotic use is doing something that on the face of it may appear simple: decrease the density of the facilities. But even giving animals more room means major management adjustments on the farm, says Norby.

"Sometimes it's easier to put antibiotics in feed, rather than change the way you do things." □

Future issues of the Land Stewardship Letter will examine the impacts antibiotic restrictions would have on agriculture and how some sustainable farmers are already successfully raising animals without antibiotics. We will also discuss the confusion consumers face as they seek out "antibiotic-free" products.

Bacterial backwaters

Antibiotics & resistant microbes are emerging from rivers & streams

Wendy Halterman loves the Minnesota River, and explores it by boat or foot any chance she gets. The 18-year-old resident of the western Minnesota community of Montevideo, which lies near the top of the river's watershed, knows where the good fishing spots are, how to find the bald eagles, and which stretches offer the best canoeing. But she recently gained an even deeper insight into what the river offers, and it isn't pleasant. Halterman has done a high school science fair experiment that indicates the river is home to bacteria that don't die when exposed to various antibiotics. And, perhaps even more troubling, the bacteria seem to become even more resistant the further downstream one goes.

In her experiment, Halterman grew bacilli bacteria from the water and sediment samples she had collected from seven spots along the length of the river. Once fuzzy bacterial growths were thriving in petri dishes, she exposed them to eight commonly used antibiotics—from human drugs to antibiotics used in livestock agriculture to triclosan, an ingredient used in household hand soaps. The antibiotics should have killed the bacteria Halterman was growing. But it didn't always work that way. In fact, sometimes the antibiotics had little impact at all on the bacteria.

"The overall data seemed to indicate that there was a small decrease in the effectiveness of the antibiotics as you go

Water see page 15...

downstream," the young woman says in the careful language of a scientist.

Halterman wants to be a science teacher someday, and the bacterial resistance experiment won her a trip to the International Science and Engineering Fair in California last year. But she doesn't have a college degree, much less a Ph.D., so it would be easy to pick her work apart as lacking a scientific edge. However, Halterman's research is in good company these days. Studies here and in Europe are finding many of our waterways are carrying a heavy load of antibiotic-resistant bacteria. Such research has major implications as the livestock industry, a major user of antibiotics (and a big source of water pollution), struggles with ways to alleviate public concern over antibiotic resistance. These studies show not only that antibiotics are reaching our environment through various means, but also that the resistant bacteria they spawn have some staying power. And the longer they hang around, the more of a threat they pose to human health.

Rx rivers

In March, the U.S. Geological Survey released the results of the first nationwide study of various medicines and household substances in waterways. Researchers checked 139 streams in 30 states (including Iowa and Minnesota) during 1999 and 2000, and found more than two dozen human or veterinary antibiotics in the water. The survey even found triclosan, the key ingredient in antibacterial soaps that Wendy Halterman tested on bacilli samples in Minnesota.

That antibiotics are being found in our waterways is not surprising, considering how inefficient an animal's gut is at absorbing drugs—25 percent to 75 percent of the antibiotics given to animals can be excreted unaltered through feces. Consider that U.S. livestock facilities produce 180 million tons of manure waste annually, and animal agriculture's potential for sending resistant bacteria into the environment is staggering.

In North Carolina, researchers have found three antibiotics used in pork production in streams near hog lagoons. They also found them in the nearby Neuse River and in tap water on one of the swine farms.

But the livestock industry maintains such studies only show that antibiotics are in our water; it doesn't prove those

antibiotics are in consistent enough concentrations for resistance to evolve.

"There's a lot of interesting things that they found, but what do they mean scientifically?" asks Tom Burkgren, Executive Director of the American Association of Swine Veterinarians.

At the 1999 meeting of the American Society for Microbiology, research was presented that shows the extent to which antibiotic resistant bacteria is present in the environment. One researcher sampled waterborne bacteria from more than a dozen rivers in the U.S., including the Mississippi, Missouri, Ohio and Colorado. He tested the microbes' resistance to ampicillin, a synthetic penicillin. At each of the 21 sites examined, ampicillin failed to kill between 5 and 50 percent of the bacteria.

Yet another study presented at the conference showed geese living year-round in Chicago's suburbs had bacteria in their feces that was resistant to streptomycin, erythromycin, vancomycin, tetracycline and penicillin-type drugs.



A drainage ditch flows near a large-scale hog operation in Renville County, Minn. Twenty-five percent to 75 percent of the antibiotics given to animals are excreted unaltered through feces. (LSP photo)

Resistance rates ranged from 2 percent to 100 percent, depending on the microbe and the antibiotic tested. Since the geese had little direct contact with humans or farms, they must have picked up the resistance through the general environment, say researchers.

Perhaps the most troubling research is coming out of Illinois. Animal scientists there found bacteria that were resistant to the antibiotic tetracycline in two swine manure lagoons. The study, which was published in the April 2001 issue of *Applied and Environmental Microbiology*, found resistant bacteria in water under the lagoons. The superbugs were also found in water as much as 820 feet downstream from the lagoons (the plume may have extended further, but there were no test

wells beyond that point).

But of even bigger concern is that the scientists found genes resistant to tetracycline in soil bacteria near the lagoons. That means the resistant genes might have been transferred from one type of bacterium to another, or that the soil bacteria had evolved resistance after being exposed to the tetracycline antibiotic. If the resistant gene is adapting to the local soil biota, that means its chances of surviving, thriving and moving outside of an animal's gut are greatly increased.

What these and other studies show is that antibiotics are now so persistent in the environment that our rivers and streams (and perhaps even soil) are becoming reservoirs for cultivating and supporting the evolution of resistance.

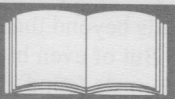
But does all this pose a danger to human health? It could if those resistant bacteria are resilient enough to make it into our guts through drinking water. In the U.S., groundwater is the source of 40 percent of the water used for public

supplies, and 97 percent of the rural population's drinking water. Even if one doesn't intend to drink the water—say a person accidentally swallows a few drops during a fishing trip or while wading a stream—that bacteria could make it into the gut. People who have ingested those resistant bacteria may run into trouble down the road when they are being given antibiotics to treat an infection. Bacteria that evolved resistance to penicillin or tetracycline in farm country would present a formidable challenge when exposed to those same drugs later in a doctor's office.

Scientists say more research needs to be done before a direct connection between antibiotic use in livestock, resistant bacteria in the environment, and human illnesses that resist drug treatments can be made.

Back in western Minnesota, Wendy Halterman has tried to follow up her research by pinpointing what antibiotics are present in the Minnesota River. Due to technical difficulties, that experiment didn't work out. However, she's convinced that the clock is ticking in a race between humans and bacteria.

"The evolution of a life threatening antibiotic-resistant bacteria is not just a theme for a science fiction movie," says Halterman. "If bacteria can develop faster than we can develop new antibiotics then I think the health costs in the world and our nation will rise dramatically." □



The Antibiotic Paradox How the Misuse of Antibiotics Destroys Their Curative Powers

By Stuart B. Levy
2002 (2nd edition); 320 pages
\$17.50 paperback
Perseus Publishing,
11 Cambridge Center,
Cambridge, MA 02142
www.perseuspublishing.com

Reviewed by Brian DeVore

Writing a book that sounds the kind of alarm bells that prompt effective action is more about timing than anything. Absent the right societal infrastructure to make use of the information it presents, an important book can get a flash of attention, perhaps a headline or two, and then quickly fade. But if the timing is right, if politicians, activists and the average citizen happen to be paying attention—what some call a “teachable moment”—then a publication can have impacts far beyond the paper it’s written on. Rachel Carlson’s *Silent Spring* was such a book. So was Upton Sinclair’s *The Jungle*.

So far, Stuart Levy’s *The Antibiotic Paradox: How the Misuse of Antibiotics Destroys Their Curative Powers* has had no such luck. First released in 1992, this highly readable book is a well researched primer on how antibiotic resistant bacteria threaten to undermine one of the greatest medical advances of all time, and how the health industry and agribusiness are contributing to this destruction. Levy launches his work by setting the stage for just how much of a public benefit an antibiotic like penicillin was when it became available in 1942: “Penicillin earned the accolade ‘miracle drug’ because of its unique and rapid control of infectious bacteria that, before penicillin’s discovery, had been fully expected to kill the patient.”

Levy’s book caused a minor hubbub 10 years ago, but in general the author, a renowned authority on antibiotic use and resistance, was ignored. He shouldn’t feel too bad: *Modern Meat: Antibiotics, Hormones and the Pharmaceutical Farm*, a book written in 1984 by journalist Orville Schell, executed an even more

direct hit on one aspect of antibiotic resistance, and, like *Silent Spring*, was even excerpted in the *New Yorker* magazine. But these days the only place to find Schell’s tome is at a well-stocked library.

During most of the 1990s, Levy’s book and related articles were known only to a handful of consumer activists, science writers and, of course, pharmaceutical company officials. But the author, a medical doctor, biologist and Director of the Center for Adaptation Genetics and Drug Resistance at the Tufts University School of Medicine, just went back to work, continuing research he had been doing for decades. For example, during the 1970s his laboratory group showed that the feeding of tetracycline to chickens created antibiotic resistant *E. coli*.

Earlier this year a new edition of *The Antibiotic Paradox* was published, and this time it comes at a very teachable moment. The evidence is mounting as to just how dire the problem of antibiotic resistance really is. Major poultry companies are rethinking their use of certain antibiotics. The threat terrorism poses to public health and our food supply has made effective antibiotics a security issue. Lawmakers are seriously considering restricting the use of antibiotics as growth promotants. Just as importantly, farmers have more alternatives available for raising livestock with fewer drugs.

This new edition reflects the troubling, and yet more aware, times we live in. Levy provides an update on the latest scientific evidence related to antibiotic resistance, including an entire section on how the use of antibiotics in the fruit industry is of increasing concern. Levy also strengthens his argument that this is

an issue that must be resolved both through individual and societal action.

But the 2002 edition of his book also contains a thread of hope not present before. Levy discusses how consumers are becoming more aware of the problem and are making buying choices based on those concerns. He also devotes a section to progress made by the commercial catfish industry as it attempts to reduce its reliance on antibiotics. Finally, Levy seems quite pleased with the increasing role of nonprofit groups, professional organizations such as the American Medical Association and even governmental agencies in bringing the issue to the forefront. I talked to Levy over the telephone shortly after this new edition was published, and absent was that “lone voice in the wilderness” trait that dogs so many alarm sounders.

“It’s so refreshing to have people shake their head and see what we were saying was right,” Levy told me. “When we wrote this book in 1992, no one was interested.”

People are interested now. And books can produce significant action in roundabout ways. For example, after writing *Modern Meat*, Orville Schell went on to co-found Niman Ranch, which has emerged as one of the nation’s leading antibiotic-free meat companies. Let’s hope Levy’s book can take the antibiotic resistance issue beyond promotion of a niche market, and convince society that antibiotics are a public good we cannot afford to take for granted. □

Brian DeVore is the editor of the Land Stewardship Letter.

Life on the Farm A Pictorial Journey of Minnesota’s Farmland and its People

By Dean A. Riggott
2001; 124 pages
\$24.95 paperback
Dean Riggott Photography
831 10 1/2 St. S.W.
Rochester, MN 55902
www.riggottphoto.com

The unwritten rule with photo books that tend to be produced by New York and LA camera toters is that captions are a no-no. Perhaps these artists see it as an admission of failure to actually have to explain the story behind the photo. (The photo

should speak for itself!) Or maybe they’ve spent so much money on photo equipment that they can’t afford pen and paper to write down a few salient details about their photo subjects.

Dean Riggott’s doesn’t adhere to the captionless school of photography. That was clear when he worked for many years as a photographer for *Agri News*, a Minnesota-based farm weekly. Every once in awhile, stuck between crop updates and coverage of field days, there would be a Riggott photo essay. In these essays, photographs were the stars, but the captions, written in a lively, succinct fashion, provided the story behind the image. It was clear Riggott not only carried pen and paper, he also took the

Life see page 17...

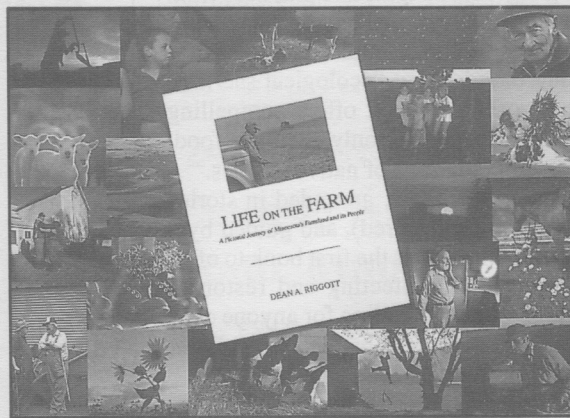
time to listen and ask questions.

Riggott's new book of photos, *Life on the Farm: A Pictorial Journey of Minnesota's Farmland and its People*, is one long photo essay, and it's a good one. Thumbing through the 95 color images and their accompanying captions provides a surprisingly complete picture—pardon the pun—of Minnesota farming. It's good news that this photographer's body of work has been given a more permanent home in book form; who knows how long Riggott's photos will last in archived issues of *Agri News*?

It's clear this photojournalist's biases lie with the family farm. But this is no Kodachrome nostalgia trip. Pictured in loving, yet realistic images, are young farmers, old farmers, confident farmers, scared farmers. Riggott portrays large corn and soybean farmers and small Amish

farmers with the same respect and technical proficiency. His photos come off as portraits without being formal. These are portraits of people working, laughing and living—not standing in their Sunday best in a well-lighted studio.

There's Art Thicke and his dog leading the dairy herd back to the barn on a southeast Minnesota ridge. Riggott's



caption provides some details about the rotational grazing system Thicke uses. There are the Serbus kids picking rocks on their family's Renville County farm. We learn not only who the kids are and what their farm produces, but also that the kids help take care of a Shetland pony that was a gift from Santa Claus. There's six-year-old Ariel Way and his grandfather Robert Way glumly looking on as a farm sale ends that family's attachment to the land. Riggott gives us a brief history of the Ways' involvement in agriculture, making the photo even more poignant (frankly, without the caption, one could attribute the boy's and the man's melancholy expressions to boredom).

Are the stories told in these captions critical to the technical beauty of the photos? No, but they add a certain luster that no amount of fancy lights and fine-grained paper could. □

Opportunities

Need a recipe for kale?

When a "civilian" cook first logs onto www.chef2chef.com, it can be a little intimidating—it is full of celebrity chef photos and uses the word "culinary" a lot. But this Web site has a very down-home aspect to it that anyone who cooks with fresh, whole foods can appreciate: a Recipe Club.

Sign up for the club and receive a free recipe each weekday via e-mail. The recipes are surprisingly simple and designed around the kinds of fresh, seasonal foods available from Community Supported Agriculture farms and farmers' markets. The Web site also has a searchable database of 280,000 recipes. □

Fresh Minnesota food

Minnesota Grown Directory 2002 lists farm fresh produce, plants, meats, dairy products, flowers and Christmas trees that are available direct from Minnesota farmers. For a free copy, call 651-296-5029 (Twin Cities) or 800-657-3700. You can also search the directory at <http://www.minnnesotagrown.com>. □

Small farm plots wanted

Nigatu Tadesse runs an immigrant-farming program for the University of Minnesota Extension Service at the Rosemount Research Station. Nigatu is looking for farm plots within a reasonable proximity to the Twin Cities of up to four acres in size for use by immigrant farmers. Farmers are prepared to rent land for up to \$175 per acre.

Resources

For more information, contact Tadesse at 651-423-2413. □

Camphill needs volunteers

Camphill Village is looking for volunteer co-workers to live and work with developmentally disabled adults in an intentional community in Sauk Centre, Minn. Camphill Village is 60 people of different backgrounds, ages, abilities and nationalities, and it is looking for people who have an affinity for land and farm work, particularly gardening.

There is no salary but living necessities are provided for and college graduates can receive \$4,725 toward their educational loans through an AmeriCorps Education Award after being at Camphill for one year.

For more information, contact: Laura Briggs, 15136 Celtic Drive, Sauk Centre, MN 56378; phone: 320-732-6365; fax: 320-732-3248; e-mail: cvmn@realp.com; Web site: www.camphillvillage-minnesota.org. □

Poultry contract report

Assessing the Impact of Integrator Practices on Contract Poultry Growers is a new report available from Farmers' Legal Action Group Inc. (FLAG). The report includes analyses of a broiler grower survey conducted in 1999, the legal implications of provisions in 18 grow-out contracts, and court decisions and current state and federal laws affecting grow-out arrangements.

The report also offers recommendations to address identified grower concerns.

A free copy of the report can be obtained by calling FLAG at 651-223-5400; or logging onto <http://www.flaginc.org/pubs/poultry.htm>. □

Stop seed contamination

Are you concerned about the contamination of seed by genetically modified organisms? The Northern Plains Sustainable Agriculture Society (NPSAS) is circulating a petition in Minnesota, Montana, North Dakota and South Dakota to communicate the level of concern there is over such contamination, which threatens to destroy the public germplasm housed by Foundation Seedstock programs in these states (see Dec. 2000 LSL and Jan./Feb./March 2001 LSL).

To get a printable version of the petition and a fact sheet on transgenic contamination of seed, log onto <http://www.npsas.org/GMOPetitionCL.html>. For more information, call NPSAS at 701-883-4304 or e-mail the organization at tpnpsas@drtel.net. □

Locker plant listing

Are you a direct-marketing farmer looking for someone to process your livestock into meat? The Minnesota Institute for Sustainable Agriculture has an extensive listing of small meat processing plants in Minnesota, as well as links to information on plants in other states. Log onto www.misa.umn.edu/Other/meatprocessing.html to check it out, or call 800-909-6472. □

LSP announces the publication
of a groundbreaking new book:

The Farm as Natural Habitat

The *Farm as Natural Habitat: Reconnecting Food Systems with Ecosystems*, a new book by the Land Stewardship

Project's Agroecology Program, was published in April by Island Press.

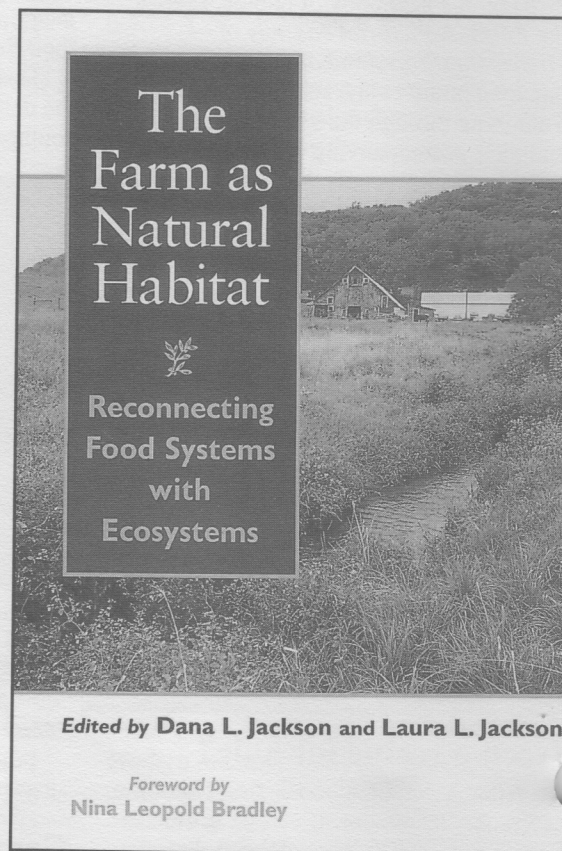
Contributors to this groundbreaking collection of writings promote the idea that restoration of a relationship between farming and the natural world enhances the sustainability of both. Contributors bring together insights and practices from the fields of conservation biology, sustainable agriculture and ecological restoration to link food and farming to biological diversity, and celebrate a unique alternative to conventional agriculture. Rejecting the idea that "ecological sacrifice zones" are a necessary part of feeding the world, the book offers compelling examples of an alternative agriculture that can produce not only healthful food, but also functioning ecosystems and abundant populations of native species.

The Farm as Natural Habitat is hopeful and visionary, grounded in stories about real farmers (several LSP farmer-members are featured), and guided by a commitment to healthy land and thriving communities. It is the first book to offer a viable approach to addressing the challenges of protecting and restoring biodiversity on private agricultural land, and is essential reading for anyone concerned with issues of land or biodiversity conservation, farming and agriculture, ecological restoration, or the health of rural communities and landscapes.

Dana Jackson, LSP's Associate Director, co-edited the book with her daughter, Laura Jackson, who is a University of Northern Iowa biology professor and LSP member. In addition, chapters were written by LSP Executive Director George Boody, *Land Stewardship Letter* editor Brian DeVore, LSP Board Member Cheryl Miller, and LSP members Tex Hawkins, Nick Jordan, Judith Soule and Beth Waterhouse, as well as several other contributors. Nina Leopold Bradley, a board member of the Aldo Leopold Foundation, wrote the foreword.

LSP Members Receive 20% Discount!

Island Press is generously offering Land Stewardship Project members a special 20 percent discount on each book ordered. To receive the discount, clip the form below or log onto the Island Press Web site at www.islandpress.org and click on the **Spring 2002 Catalog**. To receive the discount, LSP members need to enter the phrase **2LSP** on the **Promo/Dept.** line of the Island Press order form/final invoice. The discount will not show up when the initial order is placed, but confirmation of the discount will be sent later. You can also order from the publisher by calling toll free **1-800-828-1302**.



Land Stewardship Project Member Order Form—2LSP

ISLAND PRESS, Dept. 3AU, P.O. Box 7, Covelo, CA 95428

Yes, I would like to order *The Farm as Natural Habitat*
by Jackson/Jackson:

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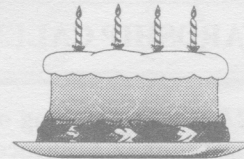
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Land Stewardship Project Celebrates 20 Years

of Keeping the Land & People Together



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To purchase tickets, use the form below. For more information, call your local LSP office:

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Clip and place this form in the envelope enclosed in this newsletter. Call 651-653-0618 for more information.

STEWARDSHIP CALENDAR

→ **JUNE 21-23—The Making of Foreclosure, A Generation of Influence** (see page 5), Milan, Minn.; Contact: City of Milan, 320-734-4411

→ **Midwest Renewable Energy & Sustainable Living Fair**, Custer, Wis.; Contact: 715-592-6595; www.the-mrea.org

→ **JUNE 25—Minimum till & no-till pasture renovation**, Rafter P Ranch, Kensington, Minn.; Contact: Dan Persons, 320-986-2336

→ **JULY 10—Dairy grazing farm tour—wintering systems in southeast Minn.**, Thicke farm, La Crescent, Minn.; Contact: 507-643-6246 or 651-345-2557

→ **JULY 13—Big Woods State Park Dairy Demonstration Farm open house, featuring grass-based dairying**, Nerstrand, Minn.; Contact: 507-526-2388

→ **JULY 14—Enormous Brontosaurus Farm Tour**, Letcher, S. Dak.; Contact: 605-527-2445

→ **JULY 14-17—American Forage & Grassland Council Annual Conference/Trade Show**, Bloomington, Minn.; Contact: 800-944-2342; www.afgc.org

→ **JULY 15—7th Annual farm tour at Homeplace Organic Beef**, Clearwater, Minn.; Contact: Connie Lahr, 320-963-3690

→ **JULY 16—LSP's Dana Jackson will speak at the Izaak Walton League of America National Convention**, Rochester, Minn.; Contact: Cherry Schwartz, 507-451-6676

→ **JULY 17—LSP's Dana Jackson will speak at the Women, Food & Agriculture Summer Retreat**, Ames, Iowa; Contact: Denise O'Brien, 712-243-5752

→ **Dana & Laura Jackson will speak**

about The Farm as Natural Habitat (see page 18), 7 p.m., Big Table Books, 320 Main St., Ames, Iowa; Contact: 515-232-8976

→ **Coteau Ridge SFA pasture walk & farm tour**, Ronning Farm, White, S. Dak.; Garver Farm, Hendricks, Minn.; Contact: Neal Ronning, 605-479-3008

→ **JULY 17-18—10th Annual Minnesota Alfalfa & Forage Expo**, Rosemount, Minn.; Contact: 651-436-3930; <http://www.umn.edu/mfgc>

→ **JULY 20—Summer Symposium of the Northern Plains Sustainable Agriculture Society**, Don & Sylvia Dufner farm, Buxton, N. Dak.; Contact: 605-627-5862

→ **JULY 24-25—Field course in organic management**, Southwest Research & Outreach Center, Lamberton, Minn.; Contact: 507-752-7372; werne022@tc.umn.edu; <http://swroc.coafes.umn.edu/>

→ **JULY 25—Fertilizing rates on established grass/legume pasture & determining economic rates for grazing/haying systems**, Dan & Cara Miller Farm, Spring Valley, Minn.; Contact: 507-346-2261

→ **JULY 26—Organic field day** (see July 24-25 event)

→ **JULY 27—Using rye to control woolly cupgrass**, Leo Seykora farm, Owatonna, Minn.; Contact: 507-451-2906

→ **JULY 29—Field day on research & demonstration garden for new immigrant farmers**, UMore Park, Rosemount, Minn.; Contact: 651-423-2413

→ **JULY 30-AUG. 1—3rd Annual Upper Midwest Grazing Conference**, Dubuque, Iowa; Contact: Larry Tranel, 563-583-6496, ext. 14; www.wisc.edu/cias/uppermidwest

→ **AUG. 1—West Central Research & Outreach Center alternative swine hous-**

ing field day & appreciation lunch (see page 7), Morris, Minn.; Contact: Rebecca Morrison, 320-589-1711

→ **AUG. 2-4—Midwest Sustainable Agriculture Working Group summer meeting**, Michael Fields Agricultural Institute, East Troy, Wis.; Contact: Dana Jackson, LSP, 651-653-0618; or Mark Schultz, LSP, 612-722-6377

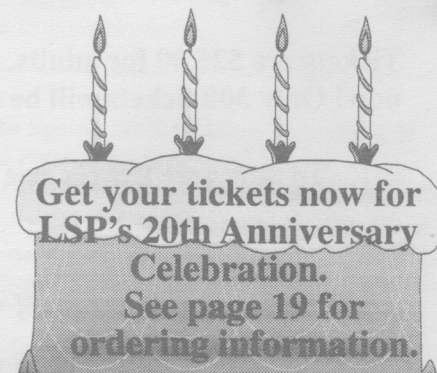
→ **AUG. 3—Northeast Minn. SFA blueberry & sustainable forestry tour**, Curt Bush farm, Cloquet, Minn.; Contact: Joel Rosen, 218-389-3306

→ **AUG. 10—Family farm tour at Earthway Farm**, South Haven, Minn.; Contact: 320-963-3690

→ **AUG. 14—Coteau Ridge SFA field day on aerating grazing paddocks with a tillage tool**, Bob Schelhaas farm, Edgerton, Minn.; Contact: 605-479-3008

→ **AUG. 17—2nd Annual Windy River Renewable Energy & Sustainable Living Fair**, Lion's Westside Park, Long Prairie, Minn.; Contact: 320-594-2456

→ **AUG. 24—Land Stewardship Project 20th Anniversary Celebration**, Good Counsel Hill, Mankato, Minn. (see page 19)



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