Energy for Iowa, health for the forests

By MELISSA LAMBERTON, Communications research assistant

Iowa landowners can supply emerging markets with sustainable biofuel while restoring forests to good health, according to new research from the Leopold Center.

John Tyn dall, assistant professor in natural resource ecology and management at Iowa State University, led a Leopold Center Ecology Initiative project to study the potential of woody biomass as a biofuel feedstock in Iowa. He worked with assistant professor Julie Blanchong, research associate Tricia Knoot, and Jesse Randall of ISU Forestry Extension.

Crop residues have received the most attention in the Midwest in the discussion about biofuel, but farmers have proved reluctant to remove corn stalks and leaf litter from their fields, due to concerns about erosion and low profitability. Additionally, few acres have been dedicated so far to energy crops like switchgrass and sorghum.

Tyn dall's research suggests that Iowa's forests can become an important biofuel source. The study estimated that Iowa has 11 to 17 million dry tons of woody biomass in forms too small to harvest as sawlogs. Private landowners own most of these forested areas in small, fragmented pieces.

Community gardens grow more than vegetables; offer places for people to thrive

By LAURA MILLER, Newsletter editor

Nature abhors a vacuum. That's what I tell myself whenever I pull a dandelion that's popped up again among my marigolds and roses. The best growing conditions always bring unwelcome plants we call weeds.

However, two garden projects supported by the Leopold Center this year have taught me a positive way to view the same scene: Nature embraces community — and (my addition) where there is none, nature will build it.

A garden project at an Ames elementary school has bolstered the community in ways that surprise even those most closely involved with it. In Waterloo, a group of minority women have bonded over seed catalogs, a garden plot and plans for a farmer’s market in an area of the city that has been described as a food desert. In both instances, the gardens will provide tomatoes, watermelons and other vegetables, but the harvest will include much, much more.

Craig Chase, interim leader of the Leopold Center’s Marketing and Food Systems Initiative and coordinator of the statewide Local Food and Farm Initiative (LFFI) program, describes it this way: “Community gardens are a way to get more people connected to gardens, growing fruit and vegetables and healthy food. That's the whole idea behind community gardens.”

Chase said community gardens can bring together people from varying backgrounds and cultures by helping them work toward a common goal.
The mission of the Leopold Letter is to inform diverse audiences about Leopold Center programs and activities; to encourage increased interest in and use of sustainable farming practices and market opportunities for sustainable products; and to stimulate public discussion about sustainable agriculture in Iowa and the nation.

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**LEOPOLD LETTER MISSION**

- **Summaries**: Easy-to-read summaries are available for these recently completed projects funded by Leopold Center competitive grants.
  - Assessment of woody biomass as a niche feedstock for biobased products in Iowa
  - Increasing carbon sequestration of working prairie by reducing invasive species in a fire and grazing system
  - Mapping potential foodsheds in Iowa: A system optimization modeling approach
  - Renewable energy feed-in tariffs: Potential opportunities for Iowa

**Scientific Journals**

Leopold Center-supported projects have produced these papers published in peer-reviewed journals. Check at a research library or the journal’s website for an abstract or full report.


This research project was conducted by former Leopold Center graduate research assistant Nick McCann, who examined three cooperative models for specialty beef producers to access the market in profitable volumes.


This ongoing research has been supported by several competitive grants from the Leopold Center. It compares a two-year corn-soybean rotation with longer, more diverse rotations that include forage legumes and small grains in addition to corn and soybean. During 2003-2011, corn yields were 4 percent higher and soybean yields were 9 percent higher in the three- and four-year rotations than in the two-year rotation. Increased diversity allowed large reductions in chemical inputs: nitrogen fertilizer use was 89 percent lower and herbicide use was 88 percent lower in the more diverse systems. Net returns to land and labor did not differ significantly among rotation systems.

**CORRECTION**: The article “Renewable energy on Iowa farms” on page 6 of the Spring 2012 Leopold Letter incorrectly referred to Farmers Electric Cooperative in Greenfield. The correct location is Kalona. Additionally, the photo caption on page 7 should have read “Iowa Mennonite School in Kalona,” not “Kalona High School.”
My first few weeks as director of the Leopold Center have been exhilarating and I am amazed at how time flies by. Every day I’ve encountered new people sharing their ideas in regard to the Leopold Center and its work. Some offer a discussion of principles based upon the work of Aldo Leopold while others bring a note of pragmatism concerning food, agriculture and sustainability. All viewpoints are welcome and important as we try to move forward in a digital culture that is very distant from biology and the natural world.

In spite of these cultural trends, I find it encouraging and refreshing to see a growing number of people who wish to be “active food citizens.” These consumers no longer are content to purchase food without some knowledge of its safety, content and origin. They have challenged food producers, processors and regulators to rethink the way they conduct their business. We are all running to keep up, and although this trend may cause discomfort to some, it is useful and productive because it makes our food system more responsive and resilient. As a result, it increases the odds that we will be able to successfully confront the challenges that face us in our food future.

So with these introductory thoughts, and given that this is my first Leopold newsletter column, I would like to share a few basics about my experiences with agriculture, food and sustainability.

We are all products of our environment. For me it is clear that my experience with sustainable agriculture began in the loess soils of northeastern Nebraska where the land is steep, the soils are highly erodible and the upland soils are low in native fertility. These fundamental resource limitations meant that our operation was based upon conservation and sound farming practices. This was not a choice but a requirement if we were to be considered “good farmers.”

These practices involved the construction of terraces, fertilization to build soil productivity and crop rotations that kept a large portion of the highly erodible land in pasture and hay production. Of course, hay and grass production meant that ruminants (cow/calf, yearlings and feedlot) were significant enterprises because they allowed us to convert forages into cash. My interest in cattle as part of a sustainable soil management system was formed at this time.

Years later as I studied the science of ruminant physiology and rumen microbiology in graduate school, I came across the words of Dr. R.E. Hungate, a prominent rumen microbiologist in the field. In a 1950 paper, he wrote:

In a 1950 paper, he wrote:

In summary, an industrial cellulose fermentation might be profitable if the cost of collection of raw materials could be minimized through use of numerous small plants, if these small plants could be cheaply constructed, if operation could be made automatic to decrease necessary personnel, and if the concentration of cellulose fermented could be increased by continuous removal of fermentation products. Although such a situation is at present quite out of the question as an industrial process, it is almost an exact specification of the ruminant animal, a small fermentation unit which gathers the raw material, transfers it to the fermentation chamber and regulates its further passage, continuously absorbs the fermentation products, and transforms them into a few valuable substances such as meat, milk, etc. To these advantages must be added the crowning adaptation: the unit also reduplicates itself.

In today’s world where agriculture struggles to adapt to the changing demands of an intertwined food and energy future, Dr. Hungate’s words are as relevant as they were 62 years ago.

In spite of Dr. Hungate’s timely timeless comments, dramatic changes have taken place in animal agriculture. My description of the past is in stark contrast to how my home county is farmed today. Most of the cattle herds are gone, as are many of the farmers who tended the cattle. Pastures have been plowed under, the terraces leveled and the waterways torn out to accommodate large equipment that ignores the natural lay of the land.

There are many economic and technological reasons why the land is farmed so differently today. Farming is interconnected to global energy markets and fewer farmers farm more land faster than ever before. Today’s crop and livestock operations are specialized and concentrated. Technology and simplified management operations fuel the trend toward continual expansion. Many farms are planted in continuous corn and high yields require increased fertilization that is accompanied by the inevitable loss of nutrients. In some areas intensive row cropping has increased rates of soil erosion to levels approaching those of eras before the widespread application of conservation measures.

These practices give rise to questions of resilience and conservation of our soil resources, and more fundamental questions. Are things really different now? Are we entering a time of chronic and multifaceted resource limitations that impact productivity, long-term sustainability and food security? It always has been risky to state that “this time it’s different.” History repeatedly has taught us, for better or worse, that we should never underestimate human resourcefulness and ingenuity.

Global population pressures may be propelling us into a new era and the need to rethink many of our past assumptions. The Leopold Center has a history of asking unconventional questions and supporting research that seeks creative solutions. It is an honor to be a part of this organization and to be on the forefront anticipating the changes that are coming to our food system. I foresee many more conversations as we move forward into our agricultural future.

Mark Rasmussen
Leopold Center seeks research ideas for 2013

The Leopold Center is looking for innovative ideas that will help fulfill its mission to identify and reduce negative environmental and socio-economic impacts of agricultural practices and contribute to the development of profitable farming systems that conserve natural resources.

Specifics are outlined in the Leopold Center's 2012 Request for Pre-proposals (RFP) that is part of its long-running competitive grants program. The deadline for submitting ideas, in the form of a 2-3 page concept paper, is August 10, 2012. Projects selected in this process are eligible for funding beginning in 2013.

The Leopold Center seeks these long-term outcomes:

1. **Water and Soil**: Water resources that increase in quality and quantity over time; improved soil quality that ensures long-term productivity and crop yields.

2. **People**: Agricultural systems that yield multiple benefits (for people, ecology and profit) and create more opportunities and vibrant communities on the land.

3. **Energy**: On-farm energy conservation that is increased with use of low external input systems and innovative energy systems relying on fewer outside energy inputs.

4. **Land Management**: Practices that enhance the integrity and adaptability of biotic communities and encourage agricultural production systems that anticipate and adapt to greater weather variability.

The Center will accept pre-proposals from investigators representing any Iowa nonprofit organization/agency and/or educational institution, including soil and water conservation districts, schools and colleges and regional development groups.

Farmers, landowners and farm-based businesses are encouraged to participate in the pre-proposal process. Each of the Center's four initiatives — ecology, marketing and food systems, cross-cutting (water, energy, soil and alternative farming systems) and policy — are participating in the RFP.

The RFP can be downloaded from the Center’s web site. Hard copies can be obtained from the Center office by calling (515) 294-3711 or emailing leocenter@iastate.edu. Inquiries should be directed to the appropriate initiative coordinator.

Hoops: The Iowa-Ukraine connection

Each year the Ukrainian company Agro-Soyuz raises 160,000 feeder pigs to market weight in 225 hoop barns. When company owners Volodymyr Khorishko and his son Dmytro took over a former farm collective in 2004, they sought assistance from Iowa State University’s “Hoop Group” to set up the low-cost hooped buildings.

The father-son duo returned to the United States in April to get advice on their next phase: hoops for gestating sows and baby pigs. Their stop in Ames was Curtiss Hall, where they met with ISU Research Farm coordinator and Hoop Group member Mark Honeyman, and one of his former graduate students, Pete Lammers. The Ukrainians also traveled to North Carolina, South Dakota and Minnesota. Currently, the company raises about 275 pigs in every barn. The hooped structures are inexpensive to build and have no exterior source of heat (even during below-zero Ukraine winters). Bedding is required in the hoop barns and in the Ukraine wheat straw is plentiful.

The Leopold Center sponsored the Hoop Group by providing an annual stipend for meetings and funds to conduct research between 1997 and 2002. Research expanded under a special USDA grant until 2006 and continues in various forms today, such as feeding beef cattle in hoop barns and niche pork production. The Center continues to support alternative livestock production systems. A new research grant will explore the use of insulated tents (or yurts) for sows and pigs.

Lammers continues to coordinate the Pork Niche Market Working Group and will be teaching at Illinois State University at Normal in the fall.
On ‘Being There’

Just as intimacy is necessary if we are going to forge close bonds with friends and lovers, it is also necessary if we hope to bond with nature and our place. As I have grown more intimate with my place I have learned that I am not apart from the land, but that I am instead a part of it.

- Tom Wessels, British conservation biologist

Ecologists often remind us that the only way to manage any landscape sustainably is by living in it long enough and intimately enough to learn how to manage it well. This is not a conclusion drawn from some romantic presupposition, but from practical experience. What ecologists have learned is that nature is extremely complex and constantly evolving. Consequently, if one does not live in close conversation with nature, one will inevitably make huge mistakes that will be harmful both to one’s self and one’s place. Since farms are ultimately biological organisms, this principle holds true for managing agricultural landscapes as well as wild lands.

Every farmer ultimately knows that good management requires intimacy. Like all living organisms, farms constantly change and therefore close involvement with the plants, animals and soils of the farm is essential to skillful farming. With the onset of climate change, such intimacy predictably will become even more important for successful farming.

Unfortunately, current market infrastructures have pressured farmers to ignore fundamental principles of good management. Farmers have been pushed to adopt a singular industrial management goal – maximum, efficient production for short-term economic return. As with all industrial economies, that goal requires farmers to specialize, simplify their management and achieve economies of scale. It is a management strategy that forces farmers to view their farms as something apart, which they must dominate, rather than something of which they are a part.

This disconnect between ourselves and the rest of the biotic community is deeply rooted in our culture. Three centuries ago René Descartes reminded us that we were “separate” from nature and that it was our obligation to “become the masters and possessors” of nature.

Fortunately, a new culture now beginning to appear encourages a very different, and more practical, vision – the growing bioregional movement. As Robert Thayer reminds us in his delightful book, Lifeplace, the transformation of “becoming native to one’s place” is “taking place in the hearts of millions of people nationwide” and that “it is a fundamental and growing movement of considerable social importance, as groups strive to become one with the nature of a place.” (Thayer, 2003) This same sense of intimacy is evolving now among a new generation of beginning farmers.

The importance of paying attention to natural ecosystems in agriculture also is taking hold among a new school of agricultural researchers. The excellent collection of essays in Agriculture as a Mimic of Natural Ecosystems serves as a prime example (E.C. Lefroy et al., 1999).

The important role that such intimacies play is gaining attention in the business world. Several years ago business innovator and design specialist John Thackara published a book, In the Bubble, in which he stressed that there is no substitute for “being there.” For all the benefits that our digital world may provide to a business, there is no way of escaping the fact that “when we persist in trying to substitute virtual experiences for embodied ones, we end up with the worst of both worlds. Digitization speeds the flow of data, but impoverishes our lived experience.” (Thackara, 2006) And that is not good for business.

So ultimately there is no substitute for “being there” – on our farms, our businesses or our communities. Being “a part of” our world instead of “apart from it” will be critical to any sustainable future.

References:

T. Wessels, Forest Forensics: A Field Guide to Reading the Forested Landscape, Woodstock, VT, Countryman Press. 2010


“Gardens are visible and offer something concrete for community-building efforts – the fruits and vegetables grown in the garden,” he said. “They also teach important skills to those who might not have ever had a link to the land.”

Growing school gardens in Ames schools

Just ask Pam Stangeland, principal at Kate Mitchell Elementary School in south Ames, who has seen many changes since her school planted its garden in 2011.

“Who would have ever thought kids would be eating beets!” she said. “It’s been amazing all the foods that students have been willing to try and are taking home to their families.”

Now in its second growing season, the Kate Mitchell garden program has been so successful – with lessons at every grade level, after-school cooking classes, and summer events at the garden – that it’s a model for other schools.

The Kate Mitchell garden occupies most of the school’s front lawn and has two distinct areas: Vegetable Valley and Friendship Garden is a 100X100-foot plot beside the school. There’s a butterfly garden along the walkway, an outdoor classroom and a series of raised beds for each grade level to conduct experiments or plant whatever they want. The area doubles as a gathering place for summer concerts, other community activities and garden work days for students, families and neighbors.

“Parents are here all the time now and the kids just love it; we’ve even had people in the community come back to volunteer in the garden,” said Penny Brown Huber, whose son Daniel is a Kate Mitchell student. “The kids are learning that they can do things that matter.”

Students harvested watermelons to feed everyone at school three times, and still had 30 melons to sell at their own farmer’s market in September. More than 500 people attended that event, which included garden tours by students, to raise enough money to buy seeds and plants for this year’s crops. In March, five students traveled to Washington, D.C. to help First Lady Michelle Obama plant a garden on the White House lawn.

In addition to parents, students and teachers, the Kate Mitchell project has had the support of numerous businesses as well as the Volunteer Center of Story County (VCSC) and Prairie Rivers of Iowa RC&D. The garden grew out of discussions about providing low-income students with more access to nutritional foods. Kate Mitchell has a large percentage of its students who qualify for free- and reduced-price school lunches.

In February, the VCSC and Prairie Rivers approached Chase for short-term funds to expand the project to Sawyer Elementary School, which also has a large population of low-income students. The Sawyer garden was planted during the last week of classes in May. The school will host twice-monthly garden work days this summer, and plans also are underway for a garden at Ames Middle School.

“My poorest students were the ones most excited about the garden because they had never had a chance to do anything in soil before,” said Glen Sibbel, who teaches third grade at Sawyer. “When you live in an apartment you don’t have the chance to play in the dirt. The garden takes them outside these four walls.”

The request for a garden came from several third-grade students, who had heard about what was going on at Kate Mitchell.

“They approached the principal and kept asking, so he knew they were serious,” Sibbel said. “We formed a garden club and 40 third-graders joined, even before we planted one seed. They’ve named the garden lightning after our school mascot. There are so many connections with our curriculum, it’s incredible.”

One key to a school garden’s success is a full-time garden coordinator, who works with teachers on curriculum development, plans volunteer activities and handles other garden details. “Garden lady” Kristen Loria is an AmeriCorps service member, assigned to the VCSC to assist limited-resource communities. Thanks to the LFFI grant that supported their efforts through June 30, 2012, the VCSC and Prairie Rivers are exploring other school garden projects in Story County.

Stangland said she saw an example of her students’ changing views on the last day of school this year. “Someone forgot lunch so they ran out to pick lettuce leaves for their own salad,” she said. “Everyone sees the garden as a genuine source of good nutrition.”

“Garden lady” Kristen Loria explains how students will paint a new mural on the outside wall of Kate Mitchell school. The school celebrated its successful community garden on Earth day with the new mural.
Growing community as well as gardens in Waterloo

GARDEN (continued from page 6)

Cheryl Faries sees the hopeful part of gardening, and the many resources needed to make a community garden successful.

That’s why this community organizer has recruited 14 women—single mothers, many without jobs and all with limited economic resources—and has been working side-by-side with them over the past year to learn business and horticultural skills. They hope to turn a corner of a county park into a garden and sell what they harvest at their own farmer’s market.

“Whatever we do, we want to make this vibrant and to succeed,” Faries said. “We know this isn’t going to happen overnight, that we have to stay together and keep focused and dedicated to the big picture.”

The image that members, who are part of the Women’s Self-Sufficiency Program or WSSP, have chosen to represent their efforts is the West African symbol for transformation, “sesa wo suban,” or “change your character.”

“You have to transform yourself before you can move forward,” Faries explained. “Our members know that we have the community behind us and all these resources, and they are willing to put in the time, so that helps to motivate.”

Andrea Geary, a program manager at the Center for Energy and Environmental Education at the University of Northern Iowa, wrote the proposal for this unique project. “Local Food in Every Pot: Growing Farmers in Northeastern Iowa through Public and Private Partnerships” is supported by a two-year competitive grant from the Leopold Center Marketing and Food Systems Initiative.

Geary said the WSSP, which offers training in life skills such as finding child care or writing a resume, was a good match for the new farmer project. Many of the women have received assistance from the Northeast Iowa Food Bank or the Supplemental Nutrition Assistance Program (formerly known as food stamps). The idea of growing food cooperatively has helped build a group identity.

“It’s been interesting to watch this group of women evolve into one cohesive unit,” said Geary, who has attended their weekly meetings. “One person used to have her own business, another is passionate about cooking, and another has a degree in environmental policy. Everyone contributes what they can.”

All are trained as master gardeners; the local master gardener club offered scholarships for the women to enroll in the 11-week course. Several also will complete business training, and they are exploring other items to market such as candles. ISU Extension horticulturist Bryan Foster has helped the group design a 2,000 sq. ft. area to grow watermelon, muskmelon, squash, tomatoes, peppers and herbs. And the Black Hawk County Board of Supervisors is providing land for the garden at Ray Tiller Park, as well as $5,000 for seeds and garden supplies. Water is supplied by the City of Waterloo.

The group hosted a ground-breaking ceremony on May 24. Later in the summer, they hope to have produce available at Jubilee United Method Church, in the heart of the African-American community in Waterloo. It will be the first farmer’s market in the area.

Supervisor John Miller said gardens are a good use for some of the more than 8,000 acres of parkland in the Cedar River Valley floodplain. Much of the land was purchased as part of a hazard mitigation grant program and deed restrictions prohibit new construction. No-cost leases for community gardens ensure that the land will be cared for, he said.

“We believe growing our own businesses is the best way to do economic development,” Miller said. “Our goal is to create 25 new farmers in Black Hawk County in the next two years.”

He said he also supported the project from a health perspective. With obesity rates rising among all Americans, Miller, who grew up on a five-generation farm near Hudson, said fresh fruit and vegetables add to a healthy diet and offer good exercise.

“Five acres will raise an awful lot of tomatoes and onions and keep you busy,” he said.

Sawyer school garden: https://sites.google.com/site/sawyercommunitygarden
Volunteer Center of Story County: http://www.vcstory.org/programs-1/school-gardens
Prairie Rivers RC&D (see projects): http://www.prrcd.org

Top: The Adinkra African symbol for transformation combines a morning star for “new day” inside the wheel, representing independent movement.
Middle: ISU grad student Lydia Brawner (with gloves) helps Sawyer students plant seeds in their new garden.
Bottom: Shay Jackson (center) cuts the ribbon before planting the WSSP Women Garden. Cheryl Faries is holding the ribbon to her right. Helping at the event were members of the Senior Companion organization.
HARVEST OF WOODY BIOMASS COULD ‘DO WONDERS’

FOREST (continued from page 1)

In a survey of 683 landowners, seven percent were “very likely” to harvest and sell woody biomass if markets developed. Thirty-eight percent indicated interest but wanted more information. Forty-three percent were not likely to participate, and 12 percent said they would not participate. The survey focused on forest-savvy, engaged landowners who belong to the Iowa Woodland Owners Association or the Iowa Tree Farm Association.

Nearly half of those surveyed expressed some interest, and Tyn dall feels confident that woody biomass markets will develop. He envisions a system that provides renewable energy to local power plants while giving landowners an incentive to improve forest health. Many of Iowa’s woodlands have suffered from a lack of management. Without the beneficial fires that once cleared out undergrowth, forests have become denser and oak trees have diminished. Invasive species like honeysuckle crowd out the native understory plants.

Careful harvest of woody biomass can address these problems and “do wonders for our forests,” Tyn dall said. Landowners can remove small trees, brush and invasive species to open up the understory, fostering diversity and improving wildlife habitat. Healthy forests improve water quality, sequester carbon and provide recreational opportunities like hunting and bird-watching.

“If you do it right, and if it’s done in the context of other management goals, harvesting woody biomass can have win-win outcomes for a lot of people,” Tyn dall said.

Urban areas also would benefit from markets for woody biomass. Cities, towns and rural electric cooperatives often own forested land and generate biomass by trimming trees or removing dead wood. “There may be a need on the owner’s side to either get rid of it or find some economic value for it,” Tyn dall said.

One concern is that if viable markets develop for woody biomass, landowners might have an incentive to harvest too many trees. But the results of Tyn dall’s research suggest otherwise. The survey found that landowners interested in biofuel markets primarily wanted to improve their woodlands, with income being only a secondary consideration.

The researchers recommend that universities and government agencies work together to develop standards for sustainable harvesting and provide landowners with information about how to manage their forests for multiple uses, including biomass production. Several power plants in Iowa already have the capacity to use renewable fuels. The major barriers are developing reliable markets and coordinating the collection of woody biomass from multiple small woodlands to deliver to Iowa power plants.

“We have a grand vision that all of these things are going to happen,” Tyn dall said. “The potential is really strong for it.”

Tyn dall’s team recently received a grant from the U.S. Department of Agriculture’s Sustainable Agriculture Research and Education (SARE) Program to research biomass in the Great Plains states. Tyn dall, Knot and Randall also are co-investigators on the University of Iowa Biomass Partnership Project and another Leopold Center-funded project that looks at woody biomass production as a strategy for dealing with the emerald ash borer.

Related research at the Leopold Center

**The University of Iowa Biomass Partnership Project** – The University of Iowa (UI) plans to develop a large supply of biofuels to replace coal in the campus power plant. The project, which received a planning grant from the Leopold Center Cross-Cutting Initiative in 2012, is part of UI’s goal to reach 40 percent renewable energy by 2020. John Tyn dall’s research laid the groundwork for this shift to biofuel, and he points to this project as an important test case for developing biomass markets. The investigators expect to need 100,000 dry tons of woody biomass annually, sourced from within a 75-mile radius of Iowa City. Learn more at [www.leopold.iastate.edu/grants/xp2012-05](http://www.leopold.iastate.edu/grants/xp2012-05).

**Emerald Ash Borer research** - A market for woody biomass could help landowners and urban areas cope with trees killed by the emerald ash borer. An invasive beetle from Asia, the emerald ash borer arrived in the United States in the 1990s and was confirmed in northeast Iowa in 2010. Jesse Randall, ISU Extension, leads a Leopold Center Cross-Cutting project with co-investigators Tricia Knot and John Tyn dall that will develop a strategy for handling the enormous costs of managing the emerald ash borer. Wood infected or killed by the ash borer could supply the emerging biofuels market and provide income to pay the harvesting costs. Learn more at [www.leopold.iastate.edu/grants/xp2011-07](http://www.leopold.iastate.edu/grants/xp2011-07).
Aldo Leopold described a land ethic as a respect for all members of the biotic community – “soils, waters, plants and animals, or collectively: the land.” The Iowa Supreme Court has its own definition for stewardship, especially for landowners.

The legal basis defining Iowa’s duty of land stewardship is outlined in a new brochure, prepared by the Drake University Agricultural Law Center. The resource is part of the Sustainable Agricultural Land Tenure program, a partnership of the Ag Law Center and the Leopold Center’s Policy Initiative.

“The Iowa Supreme Court has been very deliberate in saying there is a duty owed to the land by landowners,” said Ed Cox, a research fellow at the Ag Law Center. “A lot of states do not have this kind of language.”

Cox said Iowa was among the first states in the nation to set up soil and water conservation districts, following model statutes developed by the federal government in response to the “Dust Bowl” of the 1920s and 1930s. In 1943, the Iowa Supreme Court upheld the state’s authority to regulate farm tenancies, requiring a six-month notice of termination of a farm lease. This authority is premised on the importance of soil to Iowa and the state’s duty to protect this natural resource, Cox said.

Iowa’s soil and water conservation districts also have established maximum soil loss limits, and those districts can require landowners to implement soil conservation practices or changes in land use in order to reduce soil erosion. However, the district cannot apply these requirements unless cost-share funds of financial incentives also are available to landowners.

Local Food and Farm Initiative starts second year

The statewide Local Food and Farm Initiative (LFFI) program has received a second year of funding from the Iowa Legislature. An allocation of $75,000 was included in the agriculture and natural resources budget approved by Iowa Governor Terry Branstad.

Craig Chase, ISU Extension farm management specialist and interim marketing program leader at the Leopold Center, will continue as LFFI coordinator.

The program follows recommendations presented in the Iowa Local Food and Farm Plan, a year-long study conducted by the Leopold Center that outlined ways for Iowa to build a stronger local food economy. In April 2012, more than 130 people attended an Iowa Local Food Summit to discuss which of the plan’s recommendations should be a priority for a second year of the program, if funding was approved.

Chase said the 2011 plan offered 29 operational recommendations in six areas. Although progress has been made by a diverse group of agencies, organizations, farmers and others, he said work next year will focus on three primary areas:

- Business Development and Financial Assistance through development of food hubs and aggregation of production,
- Beginning, Transitioning and Minority Farmers, specifically incubator farms, mentoring programs and processing kitchens; and
- Food Incentives, particularly support for school garden programs.

Another need discussed at the summit was a central place to share information. Chase said ISU Extension and Outreach would be developing a website, blog and other communication tools as early as January 2013.

Find the LFFI program’s first-year report to the Iowa legislature on the web on the Leopold Center Pubs & Papers page: www.leopold.iastate.edu/pubs

Food as story, cultural icon

For public artist and teacher David Dahlquist, art is a story and “food is the greatest story we’ve ever told.”

Dahlquist presented the keynote address, “Wild Asparagus: The Art of Making Special Places,” at the Iowa Local Food Summit on April 3 in Ames. He encouraged his audience to view food as more than a product or a way to earn a living. “Food is the ritual, the thing that art is built upon,” he said. “Food is a way for us to connect and share our stories.”

Dahlquist is creative director of RDG Dahlquist Art Studio, the design and fabrication wing of RDG Planning and Design based in West Des Moines. He and his colleagues have completed more than 50 major public art installations across the country, including several new Iowa Department of Transportation rest areas and the high-trestle bicycle bridge near Madrid.

Dahlquist said that it’s important that public art tells a story about a region’s history, culture or food traditions. Local and regional food products also can be tools for economic development and help build an identity for a rural community.

“I don’t think a lot of landowners are aware that there is a legal duty to protect the soil,” Cox said. “A big step in helping landowners work toward soil conservation is providing them with a good understanding of the legal issues involved.” Here’s a list of the new resources:

- Iowa’s Duty of Land Stewardship
- Land Contracts for Beginning Farmers
- NRCS EQIP High Tunnels
- Management Intensive Grazing on Leased Land (in production, available soon)

David Dahlquist talks about bowls as metaphors for drawing people into a story at the Iowa Local Food Summit.
**Symphony of the Soil draws a crowd**

Nearly 400 people turned out to see the Iowa premieres in Cedar Rapids and Ames of *Symphony of the Soil*. The new documentary by acclaimed filmmaker Deborah Koons Garcia unearths the marvelous complexities and reveals the human misuses of our global soil resource.

Garcia attended the March 29 event in Ames and joined a panel discussion afterward with ISU Agronomy professors Michael Thompson and Bob Horton. The panel was moderated by Leopold Center Distinguished Fellow Fred Kirschenmann, who appears in the film.

“Nobody's going to be able to see this film and still treat soil like dirt,” Kirschenmann said.

The film hails soil as the protagonist in our planetary story, beginning with an explanation of how soils are created and moving toward global issues in agriculture, water and climate. Students, professors, farmers and members of the public enjoyed fresh-popped popcorn provided by the Leopold Center while watching the 104-minute film in ISU’s Coover Hall.

Garcia is best known for her 2004 documentary *The Future of Food*, which centers on genetically-engineered organisms (GMOs). The film played a key role in Mendocino County, California, where voters passed one of the first bans on GMO crops. Garcia spoke to students in ISU’s Sustainable Agriculture Program prior to the film screening, discussing the challenges of transforming a complex science topic into a compelling, accurate narrative.

“It’s everyone’s personal story, because everyone eats,” Garcia said.

_Symphony of the Soil_ paints a panoramic picture of soil, moving from glaciers in Norway to active volcanoes in Hawaii to the microcosmic world inside a plant’s roots. The central portion of the film describes an array of sustainable agriculture practices, including no-till, composting, cover crops and organic farming. “For the average person, that’s really how we impact the soil the most—how we eat and what kind of agricultural system we support,” Garcia said.

In the panel discussion after the film, Horton and Thompson described soil erosion as the most serious environmental problem facing Iowa today. They noted the importance of site-specific management, in which landowners adapt their practices to the unique characteristics of their land.

“I’m really grateful for this film, that it can serve as communication about the soil, its intricacies and complexities,” Horton said.

The Ames event was only the third screening of _Symphony of the Soil_, following screenings in Cedar Falls and Washington DC. Garcia expects the DVD of the film to go on sale late this year. In the meantime, people can purchase several short films called _Sonatas of the Soil_ that delve into particular topics, or download short clips called _Grace Notes_ for free, at www.symphonyofthesoil.com.

**Iowa State students practice Leopold’s land ethic**

On a chilly, rainy weekend in April, Iowa State students gathered around the fireplace at Aldo Leopold’s Shack and read out loud from _A Sand County Almanac_, in the same spot where the author “lay a split of good oak on the andirons” more than 60 years before.

The pilgrimage to Leopold’s famous woodslands on the banks of the Wisconsin River was the grand finale to a Spring 2012 seminar called “Learning to Love Our Land – Lessons from Leopold.” Lisa Schulte-Moore, professor in ISU’s Natural Resource Ecology and Management department and frequent collaborator on Leopold Center projects, taught the two-credit seminar. Graduate and undergraduate students in disciplines ranging from fisheries to forestry to landscape architecture met weekly to read and discuss essays from _A Sand County Almanac_ and _The River of the Mother of God_. They also read the writings of two influential thinkers who preceded Leopold, John Muir and Gifford Pinchot, and responded with essays of their own.

Discussion centered on the complexities of watershed management, predator-prey relationships, sustainable agriculture and education. When the weather warmed up, students took to the outdoors to put Leopold’s land ethic into practice. They helped restore native prairies at Peterson Park and Ames High School, cut invasive honeysuckle from the Christianson Forest Preserve, and took a tour of TableTop Farm, an organic vegetable farm near Nevada.

The class culminated in the trip to Wisconsin, where students toured the headquarters of the Aldo Leopold Foundation (which has the highest LEED rating for sustainability in the nation), visited the Shack, and stopped by the International Crane Foundation to see the protection of endangered species in action.
A new report from Michigan State University documents the collective impacts of the Regional Food Systems Working Group (RFSWG) in Iowa and how to use networks to build resilient local and regional food systems. Creating Change in the Food System: The Role of Regional Food Networks in Iowa was written by Rich Pirog, who leads the MSU Center for Regional Food Systems and formerly coordinated the Regional Food Systems Working Group (RFSWG) in Iowa, where he was associate director at the Leopold Center and its Marketing and Food Systems Initiative leader. The report is co-authored by Corry Bregendahl, an assistant scientist and evaluator at the Leopold Center. The report is on the new MSU Center’s website at: http://foodsystems.msu.edu/uploads/file/Creating_Change_in_the_Food_System.pdf

Another report, The Current State of Regional Food System Work in Iowa, summarizes interviews with leaders of 15 local food groups across Iowa that were conducted in Summer 2011 by Leopold Center intern Joanna Hamilton, a graduate student from Tufts University. Many of the leaders, who have been active in the Regional Food Systems Working Group, reported numerous successes and strategies that complement consumers’ growing interest in local foods. Read the report on the Leopold Center website: www.leopold.iastate.edu/pubs-and-papers/2012-03-current-state-regional-food-system-work-iowa

The USDA’s Agricultural Marketing Service is offering a new resource for local food development, a 93-page Regional Food Hub Resource Guide. Food hubs are businesses or organizations that connect producers with buyers by offering a suite of production, distribution and marketing services. This business model allows farmers of all sizes to meet the growing consumer demand for fresh, local food and access by gaining commercial and larger volume markets such as grocery stores, hospitals and schools. Learn more at: http://blogs.usda.gov/?s=Regional+Food+Hub+Resource+Guide

These GPSA students researched how to add social justice work to the program. They are (from left, standing): John Dean and Diego Thompson Bello; (front) Claudia Prado-Meza, Jess Soulis and Nicholas Leete; and (back) Angie Carter and Victoria LeBeaux. All students complete several core courses as well as classes in their home departments across campus.

Happy anniversary!

Iowa State’s Graduate Program in Sustainable Agriculture (GPSA) celebrated its 10th anniversary during the program’s annual research symposium and poster session on April 11. Since 2001, ISU has awarded 56 master’s degrees, 14 doctorates and 15 minors in the program, which includes 58 current active students. ISU Professor Emeritus John Pesek reviewed the program’s many ties with other issues and programs at ISU related to a growing interest in Iowa-grown food.

So Hespen, a double major in public service and administration in agriculture and journalism and mass communications, set out to learn everything she could about local food at ISU. As part of her final project in the University Honors Program, she produced a new guide, Learning About Local at ISU.

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Iowa State University honors student Ashlee Hespen got a crash course on local foods when she came to the Leopold Center this year. Craig Chase, who leads the Center’s Marketing and Food Systems Initiative, wanted a new resource that would reflect the many activities and programs at ISU related to a growing interest in Iowa-grown food.

Do ISU dining halls serve local food? What classes help students address this new market? What assistance is available for young people who want to start a direct-market farm?

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Learning About Local at ISU lists 26 programs and 35 graduate and undergraduate classes that have a local foods component or could be applied to local food production and marketing. The directory provides current contact information as well as descriptions of each program’s objective, type of assistance offered, and examples. The publication is available on the Leopold Center website at: http://www.leopold.iastate.edu/pubs-and-papers/2012-05-learning-about-local-isu

Chase said the directory is a good start, and that he hopes to convert this guide and an earlier guide to state-wide resources into an online database in the future.

Hespen received her degree in May 2012. She grew up in the Grundy County town of Conrad, where she learned leadership and communication skills in 4-H. “It gave me a respect for the ag industry and how important it is to share stories of how we’re affected by agriculture in our lives every day,” she said.
It’s field day season!
If you’re aching to visit a farm, see what’s new in research, or meet others who enjoy all-things-agricultural, check out the Leopold Center web calendar. You’ll find details for all types of field days – pasture walks in northeast Iowa, demonstrations hosted by the Iowa Farm Energy Working Group, Iowa Learning Farm and Practical Farmers of Iowa field days, and celebrations and other events at ISU Research and Demonstration Farms throughout the state. A number of Leopold Center-supported research and demonstration projects are conducted at ISU farms or in cooperation with PFI members.

Working groups
Summer meetings for several working groups associated with the Leopold Center are coming.

The Pork Niche Market Working Group’s annual meeting will be 10 a.m. to 2 p.m. on July 12 at the Iowa Pork Producers Association offices in Clive. There is no charge to participate, but if you plan to attend, please contact PNMWG coordinator Pete Lammers, (515) 520-9174.

The Food Access and Health Working Group will have its summer gathering from 9 a.m. to 3 p.m. July 20 at the Iowa Arboretum near Madrid. The program will focus on food insecurity among older Iowans with presentations from the AARP Foundation and Iowa Department on Aging. Meeting participants are asked to register online to ensure a meal.

Learn about how to get support for events: www.leopold.iastate.edu/grants/education

More details, events
Check Leopold Center Web calendar:
www.leopold.iastate.edu/news/calendar

The Leopold Center Advisory Board went on a field trip to ISU’s Northeast Research Farm, June 6, 2012.