



LEOPOLD CENTER
for Sustainable Agriculture

05
ANNUAL REPORT
06

The Leopold Center
for Sustainable
Agriculture explores
and cultivates

vision alternatives that
secure healthier
people and
landscapes in Iowa
and the nation.

miss

*Aldo Leopold (1887-1948),
the conservationist, ecologist,
and educator for whom
the Center was named.*





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The Leopold Center was established by the Iowa Legislature as part of the Iowa Groundwater Protection Act of 1987.

Its legislatively mandated goals are to identify and reduce **ion** negative environmental and socio-economic impacts of agricultural practices, contribute to the development of profitable farming systems that conserve natural resources, and cooperate with Iowa State University Extension to inform the public of new findings.

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Information for this report was compiled by Leopold Center staff with the help of its researchers and educators, who are committed to improving Iowa agriculture and the lives of Iowans.

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Photos by Leopold Center staff except where noted.

balanced, yet



Few things in life are as easy as reassessing the past from the armchair of the present on a Monday morning, looking back to what *should have or could have* been done earlier. We all have faced that situation and regardless of our work, responsibilities, or interests — it surely is easier to call the shots after the fact.

I am particularly attuned to this dilemma from my seat here at the Leopold Center. Our Center team is challenged on a daily basis by a multitude of ever-changing needs, concerns and opportunities. We may be called upon to financially support a driving issue related to water quality such as nitrogen use in Iowa, speak about an emerging issue on the landscape such as ethanol, recognize the challenges in current economic practices, or look at adjustments to today's livestock agriculture in structures or on pasture.

We try to make those solid investments of our dollars and time based upon the present, the facts known as of today; yet we also must be cognizant of anticipated and subtle issues emerging. How do these achieve balance? How are they given voice? And how do we not abdicate our responsibility of boldness at the Center?

I sense that it comes down to a dynamic mixture of balance and boldness. Our investments must address the practicalities of today, our agriculture as we know it, our knowledge base. Our challenges are all real issues in real time. We are obligated to deal with today's problems today for Iowa. We also must be prepared and willing to step forward, begin the dialogue and frame emerging issues and questions.

Bringing these two approaches to the forefront requires the gentle dance of balance that must be achieved to bring a more sustainable agriculture to Iowa. And in this cacophony of words and issues, we must be a voice, sometimes alone, testing and probing the familiarities and tradition that permeate Iowa agriculture and communities. We must not be reluctant to ask the hard question, frame the debate, or speak for the unheard.

At the end of the day, I recognize that the right *balance* for Iowa agriculture does not come without *boldness*, and that boldness does not take root without the reality of balance. Hand-in-hand they must be present and received by patient and open minds.



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KIRSCHENMANN MOVES TO NEW POSITION, INTERIM DIRECTOR APPOINTED

On November 1, 2005, Fred Kirschenmann assumed a newly created Distinguished Fellow position at the Leopold Center. Jerry DeWitt was named to serve a two-year term as interim Center director.



The announcement of the change in responsibilities acknowledged the breadth of Kirschenmann's growing involvement with national sustainable agriculture issues and activities. His engagement with the Agriculture of the Middle program efforts, the work of the Seeds and Breeds committee, Silos and Smokestacks efforts in north Iowa,

the Pew Commission on Industrial Farm Animal Production, and an extensive schedule of speeches and presentations across the country reflected his increasing commitment to the broad agricultural concerns that cut across state borders and academic disciplines.

DeWitt came to the Center as head of the ISU Extension sustainable agriculture program

and coordinator of their Pest Management and Environment program. He was no stranger to the Center, having spent a decade on the advisory board and been involved in a variety of Center projects and grants. His plans are to focus on increased contact and engagement with Iowa farmers and agricultural organizations during his time as interim leader.

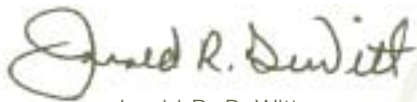
bold

I recognize that the right balance for Iowa agriculture does not come without boldness, and that boldness does not take root without the reality of balance.



This Leopold Center's FY 2006 annual report of our efforts completed this past year speaks to such a blend of research, practice, and communication. These efforts represent a discourse into issues of today's agriculture and real needs for real farmers and communities across Iowa. Our work presented here also reflects more distant and challenging issues where we hope we can contribute and make a meaningful difference by offering opportunities, not necessarily for today but for tomorrow. Each opportunity may not resonate fully with all of us today. Be patient.

As we read and contemplate these findings, familiar or unique, remember that our diverse needs stretch from border to border across richly diverse audiences who all share one thing in common...*the fervent desire to bring to and retain a more vibrant and sustainable agriculture to our land, communities, and neighbors.* We share much more in common than we mark in differences. And we, at the Leopold Center, intend to move with both balance and boldness to achieve that vision of a future Iowa.



Jerald R. DeWitt
Director

Kirschenmann had been director since 2000, when he succeeded Dennis Keeney, the Center's first director.

Note: Effective January 1, 2007 Jerry DeWitt was appointed as Center Director for a three-year period.

LEOPOLD
2005
CENTER
2006
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**partial ISU Extension appointment

EVEN THE ANCIENT GREEKS AND ROMANS HAD
PLENTY OF THINGS TO SAY ABOUT CHANGE:

*All is flux, nothing stays still...Times change and we
change with them...Nothing endures but change.*

truisms about change abound

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In the past year, the Leopold Center for Sustainable Agriculture has wrestled with several significant changes and the ripples and swells that followed in their wake.

First and foremost, the decision by Iowa State University to alter the Center's leadership structure on November 1, 2005, meant that the Center advisory board and staff welcomed a newly appointed interim director, Jerry DeWitt, as well as the new staff position of Distinguished Fellow assigned to outgoing director Fred Kirschenmann. The internal transition was accomplished quickly and seamlessly, thanks to DeWitt's familiarity with the Center. His years of service to sustainable agriculture and the Center's advisory board helped ease some initial concerns about the changes.

Following the departure of assistant director Mike Duffy in July 2005, the Center had an opportunity to reassess the future of the Policy Initiative that Duffy had managed. Doug O'Brien, an attorney specializing in agricultural law who has considerable experience with federal agricultural policy making, was commissioned to write a report outlining all of the Center's options for continued work in policy research.

O'Brien's report was shared with the next group of agents for change—the program review team that visited the Center in March 2006. The university-mandated review was in the works well before the shift in leadership and the decision was made to proceed with the review process in order to provide advice and guidance for the interim director.

The six-member review team issued a detailed report with suggestions for changes in all aspects of the Center's operations.

What was the staff doing while all this change was occurring?

We continued the work with which we were charged in the 1987 Groundwater Protection Act. In 2005-2006,

- ✱ we solicited grant proposals in the three initiatives,
- ✱ we funded 30 new projects across the initiatives,
- ✱ our value chains project added a flax working group,
- ✱ our team promoting grass-based production expanded its farmer outreach efforts,
- ✱ we worked with grantees to promote findings from their research in print and on-line,

PROGRAM REVIEW TEAM SURVEYS CENTER OPERATIONS

Iowa State University requires periodic reviews of each department and center, and it was the Leopold Center's turn to undergo assessment in 2006. A six-member review team was chosen to reflect on both the Center's broader sustainable agriculture mission and its service to Iowans. The team received a self-study document prior to their site visit in March 2006.

While they were in Ames, the team heard testimony from more than 60 individuals including ISU and College of Agriculture administrators, farmers, ISU faculty, department chairs, center directors, representatives from farm groups, NGOs, conservation and environmental groups, collaborators from other academic institutions, and members of the Center's advisory board and staff.

Review team members for 2006 were:

Jill S. Auburn, National Sustainable Agriculture Research and Education (SARE) program director, USDA-CSREES, Washington, D.C. (review team chair)

Jim Andrew, Greene County farmer, Jefferson, Iowa

Nancy G. Creamer, Associate Professor of Horticultural Science, North Carolina State University, Raleigh, North Carolina

Rich Degner, Executive Director, Iowa Pork Producers Association, Clive, Iowa

Larry Kallem, retired, former Executive Director, Iowa Institute of Cooperatives, Madrid, Iowa

Gary Nabhan, Director, Center for Environmental Sciences and Education, Northern Arizona University, Flagstaff, Arizona

Following their on-site interviews, the team submitted a report on their findings and recommendations for future action to the ISU Provost's Office. The Center, in consultation with the advisory board, has provided a formal, written response to the recommendations. Performance related to the recommendations will be monitored at regular intervals by the ISU Provost's Office.



we welcomed the new Vice-President for ISU Extension, Jack Payne, whose affinity for Aldo Leopold will help enhance the ties between ISUE and the Center,

we used the findings from an advisory board retreat as a springboard to better relationships with the organizations that appoint our board members, and

we looked for more effective ways to partner with *all* of Iowa's farmers.

Upheaval of the sort experienced at the Leopold Center last year ultimately can be either enervating or invigorating. We believe that if we can harvest the best elements of all these changes, while continuing to honor the Center's long-standing commitment to its mission of promoting sustainable agriculture, we will have succeeded admirably.

Mary Adams
Editor

Fred Kirschenmann became the Leopold Center's first Distinguished Fellow on November 1, 2005. The dimensions of the position were intended to take advantage of Kirschenmann's stature as a spokesperson for a variety of national and international sustainable agriculture issues. The change in responsibilities will allow him more time to promote networking and common ground with other groups working toward a brighter future for Iowa's farmers.



distinguished on first

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AGRICULTURE OF THE MIDDLE

One of the major projects in which Kirschenmann has invested considerable time and energy is the Agriculture of the Middle program that continues to add new dimensions to its efforts. Kirschenmann says, "Together with farmers, food industry entrepreneurs, university researchers, and others, we have worked together for the past three years to develop a new tier in the food system for highly differentiated food products, produced with good environmental stewardship using value chain marketing principles that will enable farmers to produce and retain more value on the farm. We have developed a working model and several food enterprises are now test marketing such products. A national board for this new organization, the Association of Family Farms, has been appointed to monitor the program. The National Farmers Union has agreed to partner with us to help organize farmers in Iowa and throughout the United States to produce unique, value-added products for these markets."

For more information on these organizations, see www.agofthemiddle.org and www.associationoffamilyfarms.org.

WHITEROCK CONSERVANCY

Kirschenmann was chosen to chair the board of directors for the Whiterock Conservancy (see story on page 28). Plans for the area include significant research in sustainable agriculture practices. Intensive rotational grazing has already been established on the acreage, a full-time director has begun work, and the area has been named as one of Iowa's "Great Places." A Sustainability Committee consisting of university researchers as well as practicing conservationists and farmers has been established, and they will guide much of the research work. Whiterock is open to the public for visits, tours, and meetings; the Web site is www.whiterockconservancy.org.

PEW COMMISSION

Kirschenmann was one of 19 individuals invited to sit on the Pew Commission on Industrial Farm Animal Production. This distinguished national board consists of a diverse group of animal scientists and others who will be working together, holding public meetings and hearings, and commissioning studies to help producers meet some of the challenges related to animal production in the decades ahead. Launched in spring 2006, the Commission will be conducting its work over a two-year period and plans to issue a report summarizing its findings in March 2008. More information is available at www.ncifap.org.



FRED AND JIM PENNEY

fellow reports year's activities



Photo credit: Connie Falk

SILOS AND SMOKESTACKS

Kirschenmann also serves as the board chairperson for Silos and Smokestacks, one of the nation's specially designated heritage areas operating in northeast Iowa. Silos and Smokestacks is devoted to providing opportunities for Iowans as well as tourists from throughout the world to become acquainted more directly with some of Iowa's agriculture, conservation and other heritage activities. All of the heritage areas and tours are open to the public. Details can be found at www.silosandsmokestacks.org.

COLLABORATION WITH OTHER SUSTAINABLE AGRICULTURE CENTERS

The Leopold Center is one of a number of similar centers of sustainable agriculture research and demonstration located at land grant universities throughout the country. Kirschenmann has been charged with collaborating with these sister institutions to exchange information, unite on joint projects (such as the Agriculture of the Middle and Green Lands Blue Waters), and find ways that the centers can work together to further their common interests. He has been engaged with colleagues from the newly established Kellogg Foundation-funded center at the University of California-Davis to host a meeting (also funded by the Kellogg Foundation) that would encourage all sustainable agriculture centers to more fully coordinate their common work.



In addition, he continues to accept invitations to lecture at university, NGO and farmer-sponsored conferences to share information about sustainable agriculture, the research at the Leopold Center, and how other groups are meeting the challenges facing agriculture.

board member ja delivers shivvers

Laura Jackson, a Leopold Center advisory board member since 2003, was chosen to present the 2005 Shivvers Memorial Lecture on October 19 at Iowa State University. In an address on “The Farm as Natural Habitat,” she spoke about the need to connect farm operations with their surrounding environment. Her lecture traced the links between the rise of the current corn/soybean production system and pressing environmental challenges such as the degradation of natural resources and loss of biological diversity.

While she noted some intractable obstacles to change, she also pointed out that U.S. farm policy could achieve a better balance of protecting the interests of the taxpayers, consumers, and farmers. Rewarding farmers for clean water, carbon sequestration,



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05
06

LEOPOLD
CENTER
ADVISORY
BOARD

(*Board members who served only
a portion of the fiscal year)

Lyle Asell
administrator
Iowa Department of
Natural Resources

Doug Beckman
farmer
Iowa Farm Bureau
Federation,
Glenwood

Russell Brandes
farmer
Soil Conservation
Committee, Hancock

Kelley Donham
*professor of
occupational and
environmental
health*
University of Iowa

Thomas Fogarty
*professor of
geography*
University of
Northern Iowa
(chair)

Neil Hamilton
*professor of
agricultural law*
Drake University

Stephen Howell
director
Plant Sciences
Institute,
Iowa State
University*

Erin Irish
*professor of
biological sciences*
University of Iowa

Laura Jackson
professor of biology
University of
Northern Iowa

Wes Jamison
*professor of
agriculture*
Dordt College,
Sioux Center*

Paul Lasley
*professor of
rural sociology*
Iowa State
University*

Aaron Heley Lehman
farmer
Iowa Farmers Union,
Polk City*

Jackson lecture

and cultivation of biodiversity, all things of benefit to society, would enhance environmental health. Conservation policy could become performance-based instead of practice-based.

A transcript of Jackson's lecture is located at <http://www.leopold.iastate.edu/news/pastevents/jackson/presentation.htm>.

Jackson is a biology professor at the University of Northern Iowa in Cedar Falls, and the co-editor of an essay collection called *The Farm as Natural Habitat: Reconnecting Food Systems to Ecosystems*. The Shivvers lecture series serves as a memorial to John Shivvers who farmed near Knoxville. His family has designated the Leopold Center to help manage and promote the annual presentations.

BOARD AND STAFF CONVENE FOR FALL RETREAT

What is the true role of an "advisory" board? How can board members and staff members communicate better? Do board members view themselves as advocates or impartial observers? These were just some of the issues considered by Leopold Center advisory board and staff during a day of discussion, consultation, and soul searching on October 28 at Camp Hantesa near Boone.

Facilitator Regenia Bailey of Iowa City interviewed the board members prior to the retreat to help frame the most critical questions and determine what issues were most in need of discussion. As it turned out, the retreat coincided closely with the change in leadership at the Center so there was no shortage of topics for conversation and interaction. Board and staff members agreed that the experience was a positive one, and that future retreats would be valuable to maintain the Center's focus and energy.

Paul Mugge
farmer
Practical Farmers of
Iowa, Sutherland

John Olthoff
*professor of
agriculture*
Dordt College,
Sioux Center*

Marvin Shirley
farmer
Iowa Farmers Union
Minburn*

Allen Trenkle
*professor of
animal science*
Iowa State
University

Mary Jane Olney
*administrative
division director*
Iowa Department
of Agriculture and
Land Stewardship

Jim Penney
manager
Heart of Iowa Co-op,
Agribusiness
Association of
Iowa, Ames

Jennifer Steffen
farmer
District Soil and
Water Commissioner,
Birmingham

**Wendy
Wintersteen**
dean
College
of Agriculture
Iowa State
University

DeWitt honored with 2005

spencer award

Jerry DeWitt, a longtime proponent of sustainable agriculture in academic and government circles, received the 2005 Spencer Award for Sustainable Agriculture. An ISU professor of entomology and a member of the ISU Extension staff for 33 years, he was the first non-farmer to be chosen for the award.

DeWitt's sterling credentials and background in sustainable agriculture made him a logical choice for the honor. He has served as interim national director of the USDA's Sustainable Agriculture Research and Education (SARE) program three times in the last decade. His most recent role in ISU Extension administration was serving as coordinator of sustainable agriculture activities. He played a leading role in encouraging ISU to become the first land grant university to hire an organic agriculture faculty member in 1995. In 1987, he was a member of the original advisory board for the Leopold Center for Sustainable Agriculture, serving until 1997.

DeWitt, who hails from an east central Illinois farm, continues to burnish his farm connections via farm visits, field days, and photography sessions. Indeed, he is nearly as passionate about photography as a way to document farm life as he is about sustainable agriculture. During a

faculty improvement leave in 1998, he took photographs of more than 35 U.S. farm and ranch families that eventually became part of the book, *People Sustaining the Land*.

Several members of the Spencer family were on hand to present the annual award at the 2005 Iowa Organic Conference in Ames on November 14. (DeWitt was selected for the honor several months prior to his designation as Leopold Center interim director.)

The Spencer Award recognizes those who have made a significant contribution toward the stability of Iowa's mainstream family farms. It commemorates the lives and work of Norman A. and Margaretha Geiger Spencer, who farmed near Sioux City for 40 years. The award was endowed by the Spencer family in 2002.

JERRY DEWITT (RIGHT) WITH
ELAINE AND BOB SPENCER



05 06 BOARD ELECTS OFFICERS

University of Northern Iowa geography professor Tom Fogarty was chosen to serve as the board chair in September. Joining him on the board's executive committee were vice-chair Neil Hamilton, a professor at the Drake University law school, and Paul Mugge, a farmer representing Practical Farmers of Iowa, as member-at-large.



LEOPOLD CENTER
for Sustainable Agriculture

FY
JULY - JUNE
06

OPERATIONAL EXPENDITURES:

Salaries & Benefits	\$538,156
Center Review	9,804
Board Retreat	3,794
Travel	15,399
Meeting Expenses	4,686
Services, Information & Communication	79,649
Supplies	23,252
Utilities/Maintenance & Repair	2,614
Miscellaneous	130
Total Operational Expenditures	\$677,484

RESEARCH AND GRANTS:

Competitive and Initiative Grants	\$766,266
Wallace Chair Support	20,000
PFI Partnership	50,000
LTAR Support	50,000
Ag Systems - Management & Performance Initiative	25,000
Graduate Assistantship Support - AnSc	20,000
Graduate Assistantship Support - GPSA	20,590
Total Research and Grants	\$951,856

INITIATIVE COMMITMENTS:

Ecological Systems Research	\$87,239
Marketing & Food Systems Research	69,600
Policy Research	32,279
Total Initiative Commitments	\$189,118

TOTAL **\$1,818,458**

SPECIAL PROJECTS AND ACTIVITIES

The Ecological Systems Initiative supports research and development of ecologically friendly systems that are more resilient and less costly to farmers, communities, and the environment. The initiative balances investment in programs and partners that range from individual plot work to landscape-level integration. It collaborates on multi-disciplinary projects and efforts, and supports a variety of research and demonstration projects. The desired result is a suite of viable farm enterprises that mix perennial and annual agricultural systems and benefit both the farmer and the environment.

The economic impacts of energy costs and the exploding corn ethanol economy have had a particularly dramatic impact on agriculture in Iowa.

Ecology program leader Jeri Neal talks about the past year: "The economic impacts of energy costs and the exploding corn ethanol economy have had a particularly dramatic impact on agriculture in Iowa. It has opened a fast-moving period of both risk and opportunity for our people, land, and water. Consequently, holding a conversation about a future characterized by more diverse agriculture with multiple benefits is much easier to do today than even a year ago." She adds, "Another good thing for the Ecology Initiative and the Leopold Center as a whole is that our work seems suddenly much more relevant."

The beta version of the **web-based FARM-OR program** generated from a 2004 ecology grant was released in early February. FARM-OR is a simple spreadsheet program that determines a combination of farm enterprises that will enable prediction of maximum profits and then outlines year-to-year profit variations that may occur.

A one-year, special project was funded on **Development of sustainable biomass production systems through new crop rotations and the integration of perennial crops with advance biofuel conversion technologies**. ISU agronomist Matt Liebman is exploring two types of alternative cropping systems and associated management practices that might be used to generate large amounts of biomass feedstocks for bio-based industries while better protecting environmental quality. Biomass production and management practices for single crop per year systems of corn are compared with double-crop sequences composed of triticale, corn, sorghum-sudangrass, and crotalaria. The project also compares biomass production, carbon storage and nutrient use efficiency by four perennial species (switchgrass, Indiangrass, eastern gamagrass, and big bluestem). Work includes ash recovery analysis.

ADDITIONAL PARTNER WORKSHOPS AND OUTREACH

Boone River Watershed.

Given the environmental and economic pressures building in association with an aging drainage infrastructure, will producers be able to afford the millions of dollars needed to repair these systems? What alternative approaches might be implemented that could benefit the drainage district both economically and environmentally? A planning meeting and two additional

sub-partnership meetings explored and then launched a water management project in the Boone River Watershed. Leopold components included the Gordon's Creek Marsh case study, project coordination and a CARD modeling project. Reporting was completed for Gordon's Creek Marsh, a successful public-private partnership developed over many years in Hamilton County.

ecology initiative

Conservation Practices in Iowa: Historical Investments, Water Quality, and Gaps is a special project whose partners are the Iowa Farm Bureau Federation, ISU's Center for Agricultural and Rural Development (CARD), and the Leopold Center. It complements the Boone River Water Management Project. Key questions consider what conservation practices are currently in place in Iowa, what is their coverage and cost, what are (and have been) the effects of these practices on water quality, and what would it take to improve water quality to obtain specific standards?

Work continues on **I-FARM's Integrated Crop and Livestock Production and Biomass Planning Tool**. Center support helped convene a national advisory board to oversee project development. Updates appear at <http://i-farmtools.org/i-farm/e-news/e-news12.htm> and the model is shown at <http://i-farmtools.org>.

Program leader Jeri Neal reviewed 30 Water Protection Fund, Watershed Protection Fund and U.S. Environmental Protection Agency, Section 319 **water quality project proposals** for the Iowa Department of Natural Resources (DNR) and Iowa Department of Agriculture and Land Stewardship/Division of Soil Conservation (IDALS/DSC).

RiverMap. This project began as a partnership among the Mississippi River Basin Alliance (MRBA), the Institute for Agriculture and Trade Policy (IATP), the Leopold Center, Green Lands Blue Waters, and the Sustainability Institute. Support comes from the W.K. Kellogg Foundation, Bush Foundation, and McKnight Foundation. RiverMap is an on-line database and mapping system the partners have created to collate, map and

coordinate for public access the various efforts taking place in the Mississippi River Basin to address issues related to nutrient management and hypoxia in the Gulf of Mexico. RiverMap uses a web-based survey to collect data from organizations and individuals involved in hypoxia-related activities. Additional elements of the project include a stakeholder workshop, a white paper, and Web site at www.rivermap.org.

The Neal Smith National Wildlife Refuge. Efforts in this area link research, education and outreach planning for strategic placement of perennials into annualized cropping systems to improve environmental, ecological, and economic performance of the systems. This long-range, multiple-

partner project has evolved from a 2004 Leopold competitive grant to encompass a wide range of stakeholders, including a farmer manager for the plots and multiple disciplines of inquiry, and has leveraged additional funding from several sources.



MISSISSIPPI RIVER



GRASSLAND AGRICULTURE PROGRAM AREA

(funded by the Center and the USDA hypoxia grant)

In its second year, this program identifies and addresses the barriers to the development of grass-based systems in Iowa agriculture. Grazing is viewed as vital and the program also is examining the expanding options for other crops to fill bio-based food, fuel, and fiber needs. South-central Iowa farmer John Sellers, Jr., of Corydon is working with the Ecology Initiative to provide outreach, coordinate activities and help identify research and education needs for Iowa grass agriculture farmers. Sellers' activities include participation in a number of agency and non-profit committees and programs.

- ✂ November 21 – Iowa Forage and Grassland Council (IFGC) annual meeting, grassland advisory committee participated and provided handouts.
- ✂ January 12 – Grassland advisory group reviews program.
- ✂ January 13 – Hosted Practical Farmers of Iowa (PFI) conference workshop, "Tune-up for Grass-Based Production and Marketing."
- ✂ February 9 – PFI on-farm research planning for grass- and forage-based work.

YEARBOOK OF GRASS

The Wallace Genetics Foundation, Inc. provided initial funding for a revision of *GRASS: The Yearbook of Agriculture 1948*. Managing consultant and co-executive editor, Walt Wedin, and co-executive editor Steve Fales (ISU agronomy) are working with Ecology Initiative leader Jeri Neal to organize the project. The book's national advisory team met November 9 in Salt Lake City to begin generating an outline for the contents, chapters, titles, and authors. Preliminary publisher contact has been made. Future funding from the U.S. Department of Agriculture and private business is being explored. Projected publication date is 2008, 60 years since the original was issued.

GREEN LANDS BLUE WATERS IOWA CHAPTER

(GLBW IOWA)



The Ecology Initiative, in conjunction with Practical Farmers of Iowa and ISU's College of Agriculture, launched a one-year Green Lands Blue Waters Iowa learning group to discover more about the kinds of practices and opportunities that exist for Iowa farmers to transition to the kinds of agricultural systems proposed in the Green Lands Blue Waters vision. The committee met quarterly, and visited with farmers and researchers about practices, barriers and opportunities. The coordinator was environmental consultant Del Christensen.

Members of the learning group included representatives from ISU, the Leopold Center, Practical Farmers of Iowa, Iowa Farm Bureau Federation, ISU Extension and its Value Added Agriculture Program, the Women, Food and Agriculture Network, Iowa Environmental Council, Des Moines Water Works, Trees Forever, The Nature Conservancy, Iowa Natural Heritage Foundation, ISU Research Farms, Iowa Soybean Association, Prairie Rivers RC&D, USDA/Natural Resources



June 11 – American Forage and Grassland Council annual conference and board meeting.

July 29 – PFI field day on managed grazing held on John Sellers farm near Corydon.

August 10 – Sponsored Grazing Native Lands conference in Ames with more than 60 attendees.

Launched producer conference support program, provided registration fees for 12 producers to attend grazing-related events in summer 2006.

Planned and organized eight Grazing Days programs and sites, and participated at events in Woodbury, Harrison, Decatur, and Davis counties.

Initiated strategic meetings to reorganize and revitalize Iowa Grassland Alliance (bringing it under IFGC as an Iowa Grazing Lands Conservation Initiative Committee with new funding and support from the Natural Resources Conservation Service).

Program presentations: Nebraska Grazing Conference, Iowa BioEconomy Conference, Iowa Native Lands Conference, Cow-Calf Conference.

Program cooperation with the Upper Midwest Biomass Working Group (Great Plains Institute) and Powering the Plains.

Planned joint work with IFGC and partners on organizing a series of custom grazing meetings.

Media coverage: Interviews with *The Des Moines Register* (2), *Iowa Farm Bureau Spokesman* (2), and Iowa Public Radio (2).



Conservation Service, the Iowa Departments of Agriculture and Land Stewardship and Natural Resources, University of Northern Iowa, Water for Iowans and numerous individual farmers.

The Leopold Center Ecology Initiative supports GLBW IOWA efforts through federal funds received for this purpose.

August 31 – Iowa stakeholder learning group discusses cover crops.

December 16 – Iowa stakeholder learning group considers grazing.

March 16 – Stakeholder meeting on biofutures.

May 25 – Stakeholder meeting on landscape implications, discussion on next steps for state involvement in GLBW and budget for second-year funding of PFI's GLBW coordinator approved.

GREEN LANDS BLUE WATERS

(related projects)

The Ecology Initiative administers a three-year federal government allocation targeted to support three objectives that are Iowa-based, but complementary to the basin-wide Green Lands Blue Waters effort. Objectives include: 1) optimizing agricultural production on specific landscapes, 2) facilitating land use change to create ecological buffers and water retention areas, and 3) diversifying land use to increase production of perennials for bio-based and energy crops optimizing agricultural production on specific landscapes. The federal funding for water quality-related work was obtained by the Leopold Center with the assistance of Senator Tom Harkin (D-IA) and members of his staff on the Senate Agriculture Committee.

Eight projects, plus an evaluation piece, are underway with federal funding. These include Boone River Watershed work, GLBW efforts on both Iowa and regional levels, the Grassland Agriculture project (coordinated by John Sellers), and specific research pieces on living mulch, double-cropping field peas, winter grazing systems, and cover crop use.

Offering new market strategies and more viable economic options for Iowa farmers is the primary goal of this initiative. It aggressively pursues new markets and strategies to help keep farmers on the land and making a profit. The efforts of the initiative fall into two main components — one carried out with Leopold Center funding and the other relating to value chains work sponsored in part by the W.K. Kellogg Foundation.



marketing systems initia

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Initiative leader Rich Pirog cites some of the important work done in the past year: "This past year marked an important new chapter in our work in the initiative.

We are beginning a third phase of our Value Chain Partnerships for a Sustainable Agriculture project that now is more focused on helping Iowa's businesses and farmers succeed as they participate in food and fiber value chains. In addition, we are creating more synergy and networking opportunities among the Marketing and Food System Initiative projects that we fund so they can have even greater impact on Iowa's farms and communities."

SPECIAL PROJECTS AND ACTIVITIES OF THE MARKETING INITIATIVE (MFSI):

- ✂ User-friendly version of web-based **Iowa Produce Market Potential Calculator** was released in early October. It shows current production and demand for 37 fruit and vegetable crops that can be grown in Iowa.
- ✂ December 8 – The **MFSI Workshop** in Ames attracted more than 150 people, despite snowy weather conditions. More than 30 initiative grantees gave presentations on their work. The workshop evaluations showed a very positive reaction to the breadth and progress of the Center's marketing work. Strong interest was expressed in holding the event again in 2006.
- ✂ Collaboration with ISU College of Business on **national internet-based consumer survey** reveals details about consumer willingness to pay for place-based foods, opinions about profit equity across the food chain, and perceptions of family farms.
- ✂ Distributed Marketing and Food Systems Initiative **evaluation questionnaire** to more than 200 Iowa stakeholders; responses to this questionnaire helped shape the 2006 Leopold Center competitive grant program's Request for Pre-proposals.
- ✂ The initiative is working with the **ISU Community Vitality Center** to bring a small group from ISU and the financial community to visit Northern Initiatives (a partnership between ShoreBank and Northern Michigan University). The goal is to explore ways to increase the scope and capacity of Iowa's community development financial institutions, which increases access to capital for farm businesses.
- ✂ Rich Pirog is serving on the planning committee for the **Sustainable Agriculture and Food Systems Funders 2007 Conference** to be held in Des Moines.
- ✂ Worked with ISU's Research Institute for Studies in Education to conduct an **evaluation of all Marketing Initiative** grants.

MFSI PRESENTATIONS

2005

August

- Illinois Food and Community Funders Group, Chicago, Illinois
- Iowa GIS Conference, Ames

September

- Producer Joint Networks National Conference, Des Moines
- Agriculture of the Middle project committee, Chicago, Illinois
- ISU Sustainable Horticulture class

October

- ISU Extension Farm Management training

November

- NCDC 207 Agriculture of the Middle Research Committee, St. Louis, Missouri
- Carolina Farm Stewardship Alliance Annual Conference (two presentations), Durham, North Carolina
- ACEEE Forum (National Energy in Agriculture Conference), Des Moines
- Economic Development in Rural America Conference, Des Moines; and Growing Your Small Market Farm luncheon, Ames

2006

January

- ISU Horticulture Department Seminar

February

- ISU College of Business Supply Chain Management Class (two presentations)
- ISU Center for Transportation Scholars Seminar (simulcast at University of Northern Iowa, St. Louis, Missouri, and Columbia, Missouri)

March

- Bridging the Gap Workshop, Fairfield
- ISU Farming Systems graduate course

April

- Living in Iowa* forum
- Certification marks and marketing opportunities for midsize farmers, Farm Bureau
- Economic impacts of regional food, Kellogg Conference, Asheville, North Carolina

and food tive

MFSI-SPONSORED SEMINARS AND WORKSHOPS

July 12 – Tod Murphy of the Vermont Farmer's Diner restaurant spoke at the ISU Memorial Union.

January 23 – Bertrand Weber spoke on the "Impact of Hopkins, Minnesota dining program – healthy and local foods in schools" at a meeting in Cedar Falls.

February 1 – Wil Bullock and Johanna Divine, Kellogg Society Fellows, presented "Engaging young adults in developing sustainable food systems" at the ISU Sustainable Agriculture Colloquium.

February 3-4 – Iowa Network for Community Agriculture annual conference (MFSI sponsored student scholarships).

June 1 – John Berdes and Dennis West of ShoreBank Pacific Enterprises met with interested parties in Ames and Des Moines and spoke at a seminar on community development financial institutions.



MEDIA EXPOSURE

More than 50 media inquiries (broadcast and print) were received about various marketing and value chains projects and their products. The most popular topic by far was the "food miles" work that Pirog had done earlier for the Center. With soaring prices and diminishing supplies of fuel in the United States, the importance of those miles traveled and the role local food systems could play in reducing transportation costs was of interest to media outlets from New Jersey to Portland, Oregon, and many points in between. The five-day fruit and vegetable consumption analysis, which looked at economic impacts of Iowans eating more locally grown produce, attracted considerable attention from Iowa media and National Public Radio.

VALUE CHAIN PARTNERSHIPS FOR A SUSTAINABLE AGRICULTURE (VCPSA)

The Value Chain Partnerships for a Sustainable Agriculture (VCPSA) project directed by Pirog concluded its fourth year of funding from the W.K. Kellogg Foundation.

The VCPSA team worked with Robin Hood Consulting. This firm was hired by the Kellogg Foundation to engage grantee partners who are part of Kellogg's new "market-based change" cluster within their Food and Society Initiative. Work was focused on understanding the value of VCPSA working groups and learning how to develop self-sustaining models for the evolution of these working groups beyond Kellogg funding. Collaboration with Robin Hood Consulting continued through March 2006. During that time, the VCPSA team wrote a multi-year, \$500,000 proposal to the Wallace Center of Winrock International to establish a Market-based Change Initiative.

VCPSA served as a model for the national Agriculture of the Middle project on how to facilitate technical assistance and develop farmer networks to participate in value chains.

Over four years, VCPSA project efforts leveraged more than \$2 million in cash and in-kind resources for project efforts.

Three new graduate students were hired to assist VCPSA; all are pursuing an ISU MBA with a minor in sustainable agriculture.

Four working groups continued to make significant gains. Among the year's actions:

REGIONAL FOOD SYSTEMS WORKING GROUP (RFSWG)

(founded in 2003)

Funded three new projects for \$17,000.

A subcommittee (part of Phase 2 of RFSWG) interviewed participants in several successful Iowa and Midwest food system projects to determine key indicators to developing vibrant and sustainable food systems. Group members helped prepare a new guide, "Developing a Vibrant and Sustainable Regional Food System."

Assisted Woodbury County, Iowa officials with economic analysis to aid in formulating county policies that encourage farmer transition to organic production (property tax abatement) and production of local/organic food products for purchase (local food procurement policy). These policies are the first of their kind in the nation.

Used data from the *Iowa Produce Market Potential Calculator* to analyze the economic impact if Iowans followed a diet that included five and seven servings of fruits and vegetables with 25 percent (or 100 percent over three months) of those produce items were grown on Iowa farms. Report was released to the media the week of May 22.

Supported the Northeast Iowa Food and Farming Coalition that is using local food production as a tool for rural economic development. This group was selected as one of 16 regions nationally that was invited to participate in the W.K. Kellogg Foundation's new Food and Fitness Initiative. Six regions will be selected for funding, potentially estimated at \$1.5 million over five to seven years. The Leopold Center was a critical part of these efforts.



PORK NICHE MARKET

PNMWG, led by Practical Farmers of Iowa, continues to provide value to its members, and is now examining how it could serve to help farmer-led niche pork companies cooperate

to maintain their competitive advantages over larger integrators entering niche pork markets. Work continued on the two-year \$400,000 U.S. Department of

Agriculture-National Research Initiative grant "Niche Market Herd Health and Cost Management." Collaborators include the Iowa Pork Industry Center, ISU College of Veterinary Medicine,



FLAX WORKING GROUP *(founded in 2005)*

The Flax Working Group (FWG) facilitates the growth and development of value chains for organic and conventional flax. Participants include Iowa farmers, a flax processor (BIOWA) and several flax buyers including Spectrum Organics, and PFI, ISU Extension, and Leopold Center staff. With VCPSA support, 28 organic farmers in Iowa raised more than 1,000 acres of organic flax.

ISU Extension specialists conducted four meetings around the state with flax growers and those interested in flax production to share information about growing, harvesting, and marketing flax and to arrange to conduct on-farm field trials with flax.

The Flax Working Group provided a Q&A sheet to explain terms used by American Natural Soy and Spectrum Organics, two firms that purchase, clean, and process flax for producers.

The Flax Working Group web site was launched at <http://www.valuechains.org/flax/>.

The FWG on-farm research trials were highlighted at PFI and ISU farm field days.

The Northeast Iowa Food and Farming Coalition was selected as a pilot region to receive technical assistance to increase opportunities for investment in local and regional food businesses and the groups that support them.

In addition to exploring regional retail markets and documenting the economic impact of local food businesses in Iowa, the RFSWG has assisted a regional organic dairy business researching markets and testing products. The business had \$210,000 in sales in 2004 and was expected to reach \$1.1 million in sales in 2006.

BIOECONOMY WORKING GROUP *(founded in 2003)*

Jill Euken, who coordinates the Bioeconomy Working Group (BWG), also chaired the Iowa BioEconomy Conference attended by more than 400 people in August 2005. Several projects funded by the group were described in presentations at the conference.

Funded a project on economic impact analysis of ethanol facilities. The resulting paper examined the role ownership plays in the economic impact to the region.

The BioEconomy Working Group met with the Iowa Business Council Biomass Working group in Waterloo.

Over the next year, the group plans to focus primarily on the kenaf crop to identify markets and market segments for natural fibers with high probability for success, and assess business and farm profitability of potential configurations for natural fibers processing operations.

WORKING GROUP (PNMWG)

(founded in 2002)

Leopold Center, and ISU Animal Science Department. Niman Ranch, Eden Farms, Organic Valley, and several other small companies are participating in the study. The Herd

Health team enrolled more than 90 farmers, 75 in the Midwest and 15 in North Carolina, in the project and 25 producers are involved in the intensive diagnostics phase. PNMWG initiated two

feasibility studies: one on transitioning to a trade-type or other association supported by Iowa funds, the PNMWG and others, Eden Natural became a farmer-owned LLC.



RICHARD CRUSE

Another ongoing program funded by the Leopold Center on a non-competitive basis is one launched by the ISU College of Agriculture in 2004 after extensive discussion. The Agricultural Systems: Management and Performance Initiative program activities are directed by Richard Cruse, ISU agronomy professor. More information is available on the initiative web site: www.agron.iastate.edu/centers/agsystems. The Center contributes \$25,000 annually to the work of this agricultural systems program.

agricultural systems:

management and performance

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YEAR'S ACTIVITIES

The Agricultural Systems Initiative hosted a mini-symposium October 6 on systems issues related to the bioeconomy as a major team-building exercise for proposal development. Invited ISU faculty gave brief presentations related to bioprocessing, biorenewable fuels, biorefinery locations, rural communities, and land ownership concerns.

Initiative members visited Washington, D.C. agencies in October 2005. The trip included discussions with the National Council for Science and the Environment, Department of Homeland Security, Environmental Protection Agency, Department of Energy, and the U.S. Department of Agriculture. A white paper on the group's vision of a sustainable bioeconomy was prepared and distributed at this meeting.

The 6th National Conference on Science, and the Environment (NCSE) was held January 26-27, 2006 in Washington, D.C. The conference

theme was Energy for a Sustainable and Secure Future. The Agricultural Systems Initiative presented a breakout session on "Agriculture and Bioenergy: Achieving Sustainability." This session, one of 19, had the greatest number of pre-registered participants — approximately 80 of 800 conference participants.

Members of the Initiative met with Thomas Dorr, Under Secretary for Rural Development at the USDA, January 26. Major points discussed were the impacts of local vs. non-local investors in ethanol processing plants, the impact of ownership on natural resource management, and the development of a sustainable bioeconomy.

The National Association of the State Universities and Land-Grant Colleges (NASULGC) and the University of Wisconsin-Madison hosted a water quality seminar in Milwaukee on January 17. A poster prepared by the Agricultural Initiative on ISU's Capacity on Water Resources Research, Education, and Extension was

presented by the representatives who attended the meeting.

The American Council on Renewable Energy (ACORE) and POWER-GEN organized America's premier all-renewables conference and exhibition on April 10-12 in Las Vegas. Rick Cruse participated as a member of "The Many Words of Biomass" panel discussion to address agricultural system requirements necessary for a sustainable bioenergy industry. The session considered the applications and opportunities of various biofuels and sustainable agriculture to ensure a continuous supply of biomass feedstocks while enhancing the environment and stabilizing greenhouse gases.

The Department of Soil, Water, and Climate at the College of Agriculture, Food, and the Environmental Science, University of Minnesota hosted the Fourth Annual William E. Larson and Raymond R. Allmaras lecture series on Emerging Issues on Soil and Water on April 19. Rick Cruse presented

policy initiative

initiative

on the “Future Bioeconomy and Its Impact on Soil and Water Resources.”

The Initiative organized and led a June 6 meeting at the headquarters of the National Council of Science and Environment to address barriers to development of a sustainable bioenergy industry. Attending from the Agricultural Systems Initiative were Jill Euken, Krisztina Eleki, Carl Herndl, and Rick Cruse. The goal of this meeting was to develop the framework for 1) publishing a refereed paper on barriers to sustainable bioenergy development; and 2) writing a proposal to first, identify steps necessary to remove these barriers and, second, determine the implications of barrier removal.

Following the departure of Mike Duffy in June 2005, the Policy Initiative was without a leader. Fred Kirschenmann took over as interim manager for the period when pre-proposals were being reviewed, and Jerry DeWitt joined him as co-leader of the initiative in November.

Since the initiative to date had reflected Duffy's interests and operational strategy, the board and staff agreed that this was a good time to assess what steps the initiative might reasonably take in the future. Doug O'Brien, a senior staff attorney at the Drake University Agricultural Law Center, was selected to write a report on possible directions for the Center's policy work. He interviewed board and staff members, stakeholders and policy experts about opportunities and challenges facing the Center in the policy arena. His 32-page report was submitted to the Leopold Center board and staff at the February 2006 board meeting and was shared with the review team in March.

The review team did not offer definite recommendations about the future of the initiative beyond urging DeWitt and Kirschenmann to continue providing interim leadership and having the initiative focus for the moment on issues primarily of value to the Ecology and Marketing initiatives. The board and staff continue to have discussions about the composition and activities of the initiative and about the appropriate role for the Leopold Center in the policy arena.

A 2005 Policy Initiative project (*Improving the impact and benefits of USDA research and grant programs to enhance midsize farm profitability and rural community success*) was completed and results were to be shared by the Center for Rural Affairs (CRA) at Congressional briefings in fall 2006 in Washington, D.C. The initial CRA report is shown at www.leopold.iastate.edu/research/policy_files/USDA_101006.pdf.



Since 1997, the Leopold Center has provided \$50,000 annually for basic research and demonstration efforts performed by the Iowa State University organic agriculture program staff. Program leader Kathleen Delate, an ISU horticulture and agronomy associate professor, works with Cynthia Cambardella, a USDA-ARS scientist at the National Soil Tilth Laboratory in Ames. Most of the organic crop research is conducted at ISU's Neely-Kinyon Research Farm near Greenfield.



encouraging
results from

long-term agro-ecolog

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Delate and her research associates, Andrea McKern and Daniel Rosmann, also have projects at other ISU research farms and at sites operated by cooperating farmers. Leveraged funding from USDA-Sustainable Agriculture Research and Education (SARE), the Rodale Institute and industry support included funds for six ISU students to provide program assistance in 2005-2006.

THE YEAR'S ACCOMPLISHMENTS

Overall 2005 performance in organic experiments was superb; organic corn yields reached 194 bushels per acre, and organic soybeans produced 52 bushels per acre. The first-year experiment growing Organic Flax for Spectrum Organics/BIOWA Nutraceuticals also proved successful, with an average of 24 bushels/acre (all crop was sold at a premium).

Results obtained in the second four years (2002-2005) of the Neely-Kinyon Long-Term Agro-ecological experiment demonstrated organic crop yields that were equivalent to or greater than conventional corn and soybeans. A particularly important finding is that the organic corn, which is fertilized only with composted manure (at 80 lb. N/acre) and follows an alfalfa crop, consistently out-yields the conventional corn fertilized with 120 lb. N/acre. Timely weed management and consistent soil fertility contributed to the successful outcomes.

Over the long term, soil organic C and N levels have been shown to be consistently higher in the organic system, where forage legumes and small grains are rotated with corn and soybean. A soil-building cover crop or legume-grass mixture, such as the alfalfa-oat or wheat-red clover mixtures in this experiment, is required in certified organic production. Soil fertility in organic production systems is controlled by organic amendments, such as the composted swine manure used in this study, and the inclusion of forage legumes and other green manures in extended crop rotations. This research indicates that extended organic rotations containing forage legumes have the potential to at least maintain carbon and nitrogen pools, despite the relatively high tillage intensity.

Grass and broadleaf weed concentrations continue to be greater in organic fields but weed populations did not significantly affect yield, contrary to other studies. Despite similarities in pest loads between organic and conventional systems, researchers will continue to examine

the effect of crop sequence and length on pest disruption and attraction of beneficial insects. Because of the greater potential for natural biological control in systems with limited pesticide applications and diverse biota, beneficial insects, such as parasitic wasps and predacious lady beetles, and competitive soil microorganisms, should increase in organic sites.

Reduced use of fertilizers and pesticides lowers costs of production, but may be countered by increased machinery fossil fuel use in the organic system. However, in economic analysis for these experiments, returns for corn and soybean in the organic corn-soybean-oat/alfalfa (C-S-O/A) and corn-soybean-oat/alfalfa-alfalfa (C-S-O/A-A) rotations were significantly greater than conventional C-S rotation returns. Based on the LTAR findings, organic grain crops can be successfully produced in Iowa and additional economic benefits can be derived from expanded crop rotations.



NEELY-KINYON LONG-TERM
AGRO-ECOLOGICAL
RESEARCH EXPERIMENT
IN ORGANIC CORN
AND SOYBEANS.

Photo credit: Kathleen Delate

ical research (LTAR)

ECONOMIC RESULTS

One question considered in detail this year was the cost of transitioning from conventional to organic production based on results from the Neely-Kinyon LTAR work. Production costs were found to be lower overall in the transitional organic rotations compared to conventional corn-soybean rotations. Adding in premium prices for non-transgenic soybeans in the two-year, transition-to-organic period, transitional soybean prices were greater than transitional corn, oat, and alfalfa. Soybean returns in the transitional organic rotation were greater than conventional soybean returns, whereas organic alfalfa and corn returns competed favorably with conventional corn returns. The transitional organic oat crop generated the lowest revenue of all crops in this study.

EXPERIMENTS ON FLAX, SQUASH, TOMATOES

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Projects supported in part by Leopold Center funding in 2005 include:

At ISU's Neely-Kinyon Farm, Greenfield:

- Comparison of Organic and Conventional Crops, Long-Term Agro-ecological Research Site
- Organic Flax Production (with Spectrum Organics)
- Disease Management of Organic Grapes
- Management of Soybean Staining Disease in Organic Soybeans
- Insect Pest Management in Organic Sweet Corn
- Organic Soybean Variety Trial
- Organic Soybean Rust Management
- Insect Pest Management in Organic Squash
- Organic Squash Variety Trial
- No-Till Organic Tomatoes

At the USDA Plant Introduction Station, Ames:

- Alternative Herb Crops

At ISU's Southeast Research Farm, Crawfordsville:

- Organic Flax Trial

SHARING THE NEWS

Information on the organic program research was presented to 2,703 participants at 50 research and extension presentations in Iowa and other states. In addition, the program sponsored six field days at research station and on-farm sites, addressing organic grain, hay, and vegetable crops research, for a total audience of 409 producers and agricultural professionals.

on-farm research by

practical farmers of iowa

benefits from
leopold center support

The Leopold Center has contributed \$50,000 annually to the statewide work of Practical Farmers of Iowa since 1997, primarily to support the Farming Systems Program. (ISU Extension also participates in this program.) Twenty-five PFI field days and summer workshops were held in FY 2006 and attended by 1,500 participants; 19 of these were part of the Farming Systems program. Leopold Center support also funded several workshops at PFI's January 2006 annual conference, including sessions on producing meat for ethnic markets, managing Canada thistles, and grass-based meat marketing (presented by beef consultant Allen Williams).

The availability of Leopold Center funds allows PFI to respond quickly to research and education needs that may later generate targeted dollars from other sources. One example occurred with the avian influenza situation. Support provided by the Leopold Center allowed PFI to initiate a dialogue among state veterinary authorities and the owners of small production flocks, and brought ISU Extension veterinarian Daryl Trampel to two field days to answer farmers' questions.

on farrowing in alternative swine systems; it will generate a herd health guide about unique challenges facing these alternative systems. SARE also is supporting new research on crown rust of oats in which PFI is collaborating with ISU small grains breeder Jean-Luc Jannink and scientists and farmers in Minnesota. Even in good years, the oat crown rust fungus represses yields of this important sustainable crop. This project may help farmers develop their own bio-diverse oat varieties that would be most resistant to the rust fungus.

LEVERAGING AND COLLABORATING

Leopold Center backing also helps the Farming Systems Program leverage support from other sources. Even a small amount of money used as a match can help PFI attract additional partners. One example is a soon-to-be completed SARE-funded project

For several years, PFI has collaborated with ISU entomologist Junwe Zhu, who is studying biological control of the soybean aphid with the help of Leopold Center competitive research grants. In 2006, PFI also worked with ISU entomologist Matt O'Neal and National Soil Tilth Laboratory scientist Jeremy Singer whose Leopold Center project focuses on the role of cover crops in controlling the soybean aphid.



LINDA GRICE
TALKED
GRAZING AT
THE GREEN
LANDS BLUE
WATERS
FIELD DAY.

GRAZING

Leopold Center grasslands consultant John Sellers, Jr. spoke at a PFI grazing field day held at the Linda and John Grice farm in South English. He talked about the economic and environmental value of grazing in the context of bringing more perennial and cover crops to the land.

At a February 2006 planning meeting, PFI's Farming Systems Program Team assembled a group of expert graziers, many of whom expressed the need for upper-level information on grass finishing for cattle. They will be assisted by Ronda Driskill, who joined the Farming Systems Program team in late 2005 and has an M.S. in animal nutrition. She will work with several graziers to measure the feed value of stockpiled cornstalks, and is preparing a program on grazing for the next PFI winter conference. (See www.practicalfarmers.org.)

FLAX IN BLOOM AT THE 2005 JEFF LONGFELLOW FIELD DAY NEAR BEDFORD..



FLAX RETURNS

Flax, which hasn't been grown much in Iowa for 60 years, is making a comeback. Consumers recognize the health benefits of the omega-3 fatty acids in flax oil, and a national health food company is buying Iowa's locally-grown organic flax seed at a premium. A major flax feasibility study was begun in 2005 by PFI, ISU Extension Value Added Agriculture, and ISU agronomists. Leopold Center and VCPSA funds supported the involvement of PFI staff and nine farmer research cooperators in the first year of the project. They looked at several aspects of profitable flax production.

RON DUNPHY, CENTER, COMPARED ORGANIC LOW-LIN SOYBEANS TO ORGANIC TOFU SOYBEANS ON HIS FARM NEAR CRESTON.

LOW-LINOLENIC ACID SOYBEANS

ISU research helped develop the "low-lin" soybeans that don't require hydrogenation to prolong shelf life. In addition, marketing these beans offers a nice premium to growers. Leopold Center support in 2005 was responsible for two field days and two on-farm trials showing low-lin soybean production options to farmers.

Ron Dunphy of Creston conducted a field trial to evaluate low-lin varieties for organic growers who have been involved in the tofu and soy milk markets. At this point, the market for organic low-lin soybean is not as well developed as the tofu bean market.

SEED TREATMENT

Organic growers have not been comfortable with some of the substances customarily used to keep corn seed from rotting. However, 2005 trial results from ISU's Neely-Kinyon Research Farm showed that a microbial seed treatment product increased corn yield when compared with no treatment. (The Leopold Center Ecology Initiative also is supporting research to look into natural seed treatments.) Further testing is underway.

MATCHING HYBRID AND YEAR

Corn that excels at one spot in a crop rotation may not be such a winner in another time slot. Richard Thompson, who uses corn twice in one crop rotation on his farm, tested several hybrids in a 2005 replicated trial following soybeans. He identified a winner, and plans to conduct additional comparisons so he can better match the corn to the preceding crop in the rotation.

Photo credits: Rick Exner, PFI

center helps fund

grape and wine

program for iowa

The Leopold Center was among the early proponents of reestablishing grape production as a vital part of the Iowa agricultural landscape. Rich Pirog's report on Grape Expectations (2000, rev. 2002) and the Center's strong support for ISU horticulture projects that tested grape varieties and management practices on ISU research farms helped encourage public interest in grapes as a lucrative alternative for Iowa agriculture.

In 2005, the College of Agriculture, ISU Extension, and the Leopold Center joined forces to lay the groundwork for establishing a Grape and Wine Institute. The institute will promote excellence in wine and wine-making (enology) research, teaching and Extension education to support the development of Iowa's growing grape and wine industry. This institute will respond to industry needs by providing relevant grape and wine research and education. M.R. Dharmadhikari was hired in 2005 as Iowa State's first Extension

Enologist. He came to ISU from Southwest Missouri State University where he had started a wine advisory service that assisted wine makers and grape growers in Missouri and several Midwest states.

Among his major activities are to:

- Assist in the establishment of a Grape and Wine Institute at ISU and lead the development and coordination of ISU's viticulture and enology program,



GARST FAMILY

Center accepts new role in preserving Iowa's **unique**

In 2005, one of the largest land donations ever made in Iowa established the Whiterock Conservancy in west central Iowa. The initial gift was the opening round in what will ultimately be a 5,000-acre donation from six members of the Stephen and Mary Garst family of Coon Rapids (descendants of legendary Iowa agricultural visionary Roswell Garst). The Whiterock Conservancy was created to serve as an innovative laboratory for multipurpose land use.

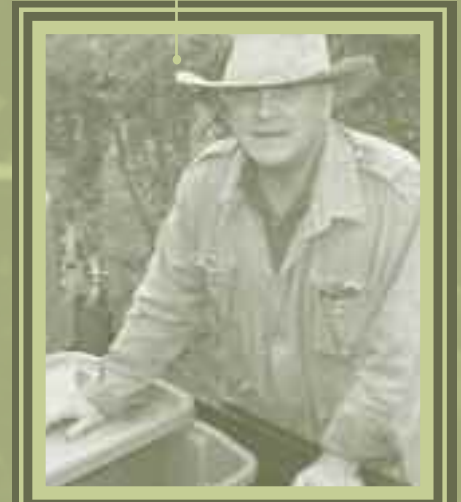
Because the Garsts hope to encourage research in sustainable management practices on the land, they chose the Leopold Center as one of the supported organizations to help guide the creation of a working land conservancy. The Iowa Natural Heritage Foundation and the Iowa Department of Natural Resources also hold seats on the governing board, along with three family members. Fred Kirschenmann of the Leopold Center served as the board's first president.

"Given the diverse landscape and land uses in the Whiterock Conservancy, it provides an excellent laboratory to do research in sustainable land management techniques," comments Kirschenmann. He goes on to point out: "The rich biodiversity of the conservancy provides many opportunities to explore various biological synergies to support a vibrant agriculture that is less energy dependent."

DR. MARK KIRKLAND, NORWALK, IOWA
HALLELUJAH VINEYARD

- Offer workshops and short courses for wine producers with the goal of increasing their knowledge on all aspects of winemaking and marketing,
- Partner with community colleges in the development of an enology and viticulture education consortium and develop a job training program,
- Develop a wide range of analytical and diagnostic services for grape growers and winemakers,
- Assist Iowa wine and grape growers in planning and conducting industry meetings, and
- Develop a Wine Quality Award program that would offer wine buyers a quality assurance rating stamp of approval as well as a new tool to use in selecting wine,
- Establish an Extension Enology Web site and provide on-line information.
- Conduct research for the development of new methods of processing grapes into wine and juice, and training wine makers,

HORSE TRAIL RIDES



resources

SUPPORT FOR WHITEROCK

The first task of the supported organizations was to help the conservancy make plans for the best use of the myriad resources at Whiterock and raise funds for some of the education and research activities. Whiterock's abundant natural attributes include bromegrass pasture and modest amounts of cropland (most currently enrolled in the Conservation Reserve Program), reconstructed prairies, timber, oak, savanna, rare side hill seeps, and numerous fishing ponds.

Baseline measurements on all the Whiterock assets — soils, water, livestock, birds, and plants — are being gathered by a number of researchers and institutions. This land has the potential to provide agricultural income, paid hunting and tourism opportunities, environmental education, and a wealth of findings on wise land management. The Center will continue to be involved in directing the Conservancy, and will commit some resources to Whiterock projects related to sustainable land use practices.

initiatives sponsor **competitive**



The Leopold Center research initiatives support projects in these areas:

Ecology: development of ecologically friendly systems which are more resilient and less costly to farmers, communities, and the environment;

Marketing and food systems: promotion, development, and discovery of markets for food, fuel, and fiber that support vibrant local communities and protect natural resources; and

Policy: analysis and development of new food, agriculture, and natural resource policies that are community, farmer, and environmentally friendly.

ECOLOGY INITIATIVE

The Ecological Systems Research Initiative awarded 13 of 26 pre-proposals received from the Summer 2005 RFP. Another seven projects received renewals for a second or third year of funding.

Ecology Initiative existing grants –

Renewals for second and third year of funding

- 🌿 Total amount awarded – \$210,434
- 🌿 Total number of projects – 7

New Ecology grants – 2006

- 🌿 Total amount awarded – \$246,031
- 🌿 Total number of projects – 13

NEW Assessing soil quality impacts after conversion of marginal cropland to productive conservation, 2 years

T. Sauer, C. Cambardella and D. James, USDA-ARS National Soil Tilth Laboratory; and H. Asbjornsen, ISU natural resource ecology and management

This work with productive conservation will examine whether planting trees on low productivity and/or eroded cropland, either in an agroforestry system or as afforestation, has a significant benefit for soil organic matter content and associated ecosystem services.

Assessment of triticale varieties for swine feeding performance and tolerance to late planting, 2 years

L. Gibson and J.L. Jannick, ISU agronomy; and M. Honeyman, ISU Research Farms
Four triticale feeding trials (two winter and two summer) will be conducted to evaluate pig performance in hooped houses. Investigators have seen both economic and environmental advantages from growing triticale in Iowa, but lack information on swine feeding performance. Tests will be conducted at three sites to determine varietal adaptation of triticale in Iowa cropping systems.

NEW Bird nesting on rotationally grazed warm- and cool-season grass paddocks in southern Iowa, 1 year

J. Pease and R. Marquardt, ISU natural resource ecology and management

Project investigators will consider which combination of grazing treatments on warm- and cool- season pastures provides the highest grassland bird species nesting rates, while offering vital economic return to the owner/producer.

Developing ecologically sound and profitable fertilizer and manure phosphorus management strategies, 3 years

A.P. Mallarino, ISU agronomy

Project goals are to evaluate long-term impacts of a strictly response-based, low-input phosphorus fertilizer management program for corn and soybean; assess early plant availability of poultry manure phosphorus; and use the Iowa P-Index to estimate field phosphorus loss under alternative phosphorus management practices. The resulting data will be used to develop more efficient management guidelines for phosphorus.

Developing potatoes with horizontal resistance to the Colorado potato beetle, 3 years

D.G. Fisher, Maharishi University of Management, Fairfield

The investigator will continue ongoing research to develop potatoes with horizontal resistance to the Colorado potato beetle. The investigator theorizes that a process of recurrent mass selection can be used to build up resistance while preserving high yield.

NEW Development and implementation of low input delivery systems for ethanol co-products in forage-based beef systems, 3 years

D. Loy, ISU animal science, and J. Sellers, ISU Extension, Chariton

This three-part study will develop, test, and demonstrate low-cost and convenient delivery methods and supplementation

grants

programs using distillers feeds in forage-based beef production. This will provide a management tool for graziers when forage resources are limited, and an outlet for the increasing amounts of co-products generated by the ethanol industry.

NEW Devising a framework for implementing cattle-grazing and fire as management tools on grassland reserves in southern Iowa, 1 year

J. Miller, ISU landscape architecture and ISU natural resource ecology and management, and D. Engle, ISU natural resource ecology and management

The researchers first intend to work with stakeholders to identify desired outcomes. They will quantify current conditions at the study sites, and develop a fire-grazing framework to be implemented at these sites, including stocking rates and schedules, burning regimes, the extent of burning and grazing at each site, and monitoring plans. Work is being conducted at several sites in southern Iowa, primarily in the Grand River Grasslands region (Southwest Iowa/ Ringgold County).

Establishment of a field school for weed ecology and management, 3 years

M. Liebman and R.G. Hartzler, ISU agronomy

Investigators will collect data on weeds, soils, and crops from both large and small field plots under two-, three-, and four-year rotations and organize an interactive farmer/practitioner-focused field school. Educators will target weed ecology and management, with an emphasis on decision-making skills and capacities and easily adaptable, broadly applicable techniques and models.

Forage double-cropping demonstration, 3 years

I. Lamb, Iowa Native Lands; S. Barnhart, ISU agronomy; and M. Honeyman, ISU Research Farms

Research plots of cool season legume crops (alfalfa and medium red clover) will be inter-seeded with warm season native prairie species to generate management and forage quality evaluation data. The investigators are seeking forage alternatives with improved diversity that require fewer management inputs while exhibiting high-quality performance.

NEW Grazing compatibility in and for future years, 5 years

E. Johnston, Southern Iowa Forage and Livestock Committee, and J. Klein, Natural Resources Conservation Service, Corning Research will be conducted on wildlife compatibility with grazing and grassland species conversion from cool to warm season grasses. In-field education will be done with high school and college agriculture students to inform them about rotational grazing management and conservation.

NEW The impact of biodiversity services in row crop production in annual versus perennial landscapes, 2 years

M. O'Neal, ISU entomology, and L. Schulte, ISU natural resource ecology and management

Investigators propose to compare levels of insect biodiversity and insect pest suppression between integrated perennial-annual landscapes and landscapes dominated by corn-soybean production agriculture. This will offer a scientific foundation for enhancing biodiversity within landscapes dominated by annual row crops.

NEW Integrated soil and weed management production systems for perennial food crops, 2 years

G. Nonnecke and C. Dilley, ISU horticulture, and T. Loynachan, ISU agronomy

The goal is to provide strawberry and grape growers with sustainable weed management options and improved tools which they can use to monitor and assess the quality of their soil. Two conventional and two alternative weed management systems will be tested for their effects on selected physical, chemical, and biological soil properties.

Integrating hunting and grazing in the Loess Hills and south central Iowa on-farm management experiences, 1 year (ending 2005)

J. L. Pease and A. L. Major, ISU natural resource ecology and management

Two landowners cooperated in this on-farm work to measure activities of birds in rotationally grazed warm- and cool-season grass pastures. The investigators planned to collect real-life data in an attempt to validate prior experimental work on managing forages to benefit both livestock and wildlife. Unexpected changes in practices by the two landowners and health difficulties with the on-site researcher resulted in observational data, but no substantive trends or data.

Integration of natural seed treatments in organic and open-pollinated corn systems, 2 years

S. Goggi, ISU Seed Science Center, and K. Delate, ISU horticulture and agronomy

The essential oils of aromatic plants will be screened for their antimicrobial properties against seed- and soil-borne corn pathogens. The investigators hope to find effective biological seed treatments that will enable farmers to improve early-planting seedling establishment and grain yields in alternative cropping systems (specifically those with low chemical inputs, such as sustainable, organic, and open-pollinated corn).



Iowa pawpaw trial maintenance, 3 years

P. O'Malley, ISU Extension, Johnson County
In 1999 and 2000, plantings were established near Columbus Junction and Nashua to assess the viability of pawpaws as a horticultural crop for upper Midwest production. This project will provide production maintenance and recordkeeping for the previously established Iowa pawpaw trials, and begin the fruit evaluation phase of the trials.

NEW New strategies to enhance sustainability of Iowa apple orchards, 3 years

M. Gleason, ISU plant pathology, and M. Liebman, ISU agronomy
This project aims to integrate the most sustainable pest management practices into an “environmentally best management practices” strategy that is more cost-effective and environmentally friendly than either traditional, spray-by-calendar management or conventional IPM methods. It also will explore the feasibility of incorporating hard cider production into the value-added product line of Iowa apple growers.

NEW Optimizing legume establishment in winter small grains, 3 years

L. Gibson and J. Jannink, ISU agronomy, and J. Singer, USDA-ARS National Soil Tilth Laboratory
First, investigators will determine which winter small grain plant traits enhance forage legume establishment by frost seeding. The next step will be to develop a predictive tool to select small grain varieties that will enhance inter-seeded forage legume establishment and persistence.

NEW Participatory ecology for ‘Agriculture of the Middle’: Developing tools and partnerships to bridge gaps among science, people and policy in landscape change, 3 years

L. Schulte and R. Atwell, ISU natural resource ecology and management, and L. Westphal, USDA Forest Service North Central Research Station
Using community- and watershed-based strategies in two central Iowa watershed communities (Stanhope and Prairie City), the researchers will use interviews to

build rapport in preparation for a series of participatory design workshops. Partner organizations will help access key individuals within the watershed communities who are capable of initiating change.

Quantifying the role of riparian management to control nonpoint source pollution of pasture and cropland streams, 3 years

J. Russell, ISU animal science, and R. C. Schultz, ISU natural resource ecology and management
This large-scale project will comprehensively study, both on-farm and on research farms, the sediment and phosphorus losses for a number of management variations on cattle grazing systems in and around riparian areas. The investigators are refining ongoing research to obtain better data on phosphorus movement associated with pastures and grazing systems.

NEW The role of herbaceous woodland perennial diversity for improving nutrient uptake capacity of riparian areas – Phase II, 2 years

J. Thompson and C. Mabry-McMullen, ISU natural resource ecology and management
Earlier data showed that nutrient retention capacity of existing and newly-established forested riparian buffers could be significantly enhanced by the addition of native perennial herbaceous plants. Work to be done in this project will help identify which shade-tolerant perennial species would be the best candidates to include in more specific recommendations.

Survey of mycorrhizal symbioses at Neal Smith National Wildlife Refuge, 2 years

I. Lamb, Iowa Native Lands; P. Drobney, Neal Smith National Wildlife Refuge; and L. Tiffany, ISU ecology, evolution and organismal biology
Staff will conduct a preliminary survey of mycorrhizal (root fungus) associations in remnant and reconstructed prairies at the Neal Smith National Wildlife Refuge to establish baseline data and experimental protocols for future investigation of this biological component of the soil. The symbiotic relationships between plants, soil, and fungi and their contribution to plant and soil vitality are poorly understood, and this project offers a starting point for understanding soil functionality in perennial plant systems.

NEW Use of native cover crops to reconstruct native grasslands, 1 year

B. Wilsey and A. Blong, ISU ecology, evolution and organismal biology
The project is concerned with restoration of diverse grassland communities, and will seek to determine if native cover crop species facilitate the growth and establishment of native Iowa grassland species.

Using the past to plan the future: Retrospective assessment of landscape and land use change in Clear Creek watershed, 1 year

L. A. Schulte, A. Rayburn, and L. Merrick, ISU natural resource ecology and management
Researchers will investigate landscape and land use change in Clear Creek watershed at four time periods and using three ecological and social measures: land cover, stream sinuosity, and housing density. The effect of many types of land management decisions can be assessed through historical reconstruction. Reconstructing the past also provides a richer understanding of what future watershed potential may be.



Variations in water and nutrient cycling and soil properties during agricultural landscape restoration, 5 years

H. Asbjornsen, ISU natural resource ecology and management; M. Helmers, ISU agricultural and biosystems engineering; M. Liebman, ISU agronomy; L. Schulte, ISU natural resource ecology and management; and R. Kolka, USDA Forest Service, North Central Research Station

The research team will examine differences in nutrient, water, and carbon storage and output for selected mixtures of annual and perennial plant communities, and then provide educational opportunities about the results. They theorize that producers can reduce nutrient loads, improve water management, and maintain or improve agricultural productivity by strategic integration of perennial plants in agricultural landscapes.

MARKETING AND FOOD SYSTEMS INITIATIVE

The Marketing and Food Systems Initiative funded 13 of 26 pre-proposals received from the Summer 2005 RFP. Another nine projects were renewed for a second year of funding.

Marketing Initiative existing grants –

Renewals for second year of funding

• Total amount awarded – \$127,811

• Total number of projects – 9

New Marketing Initiative grants – 2006

• Total amount awarded – \$264,464

• Total number of projects – 13

NEW Analysis of transaction costs for small and midsize Iowa farmers, 1 year

C. Walter, ISU logistics operations and management information systems; R. Boeckenstedt, ISU Center for Transportation Research and Education; and C. Chase, ISU Extension, Tripoli
Investigators will look at transaction costs incurred by direct-market farmers and producer networks that distribute products within Iowa. Case studies will cover six

Iowa-based businesses including two meat, two dairy, and two fruit or vegetable producers or producer groups. Transaction costs are cash payments and amortized costs associated with post-production handling, packaging, storage, inventory carrying and transportation.

Analyzing local food systems for success: Naming and graphing entrepreneurial and community-based agricultural linkages, 2 years (extended to 2006)

C. Smith, National Catholic Rural Life Conference, Des Moines

Food system maps are being developed for Adair, Greene, Guthrie, and Shelby Counties. The maps will provide information about where value is added in the local food system, where gaps in the system could provide opportunities for local farmers and entrepreneurs, and how local food resources and expertise can best be tapped and utilized.

Assessing the market potential for goat meat among recent immigrants to Siouxland, 2 years

B. Wells and H. Lewis, ISU sociology

Using input from a community advisory council, the investigators will assess the demand for goat meat among immigrants from the Middle East, Asia, Africa, and Latin America living in or near Sioux City. They will identify barriers and specify strategies that would increase the processing and marketing of goat meat; interview members of ethnic groups with similar diets; survey consumers at cultural festivals and immigration outreach clinics; and interview selected processors, grocers and restaurateurs, and goat meat producers experienced in marketing to immigrant communities.

NEW Assessing needs and fostering agricultural entrepreneurship among immigrants in several Iowa communities, 1 year

L. Fleshner, M&M Divide RC&D, Carroll

This planning grant will be used to assess the needs of existing and aspiring immigrant farmers in Carroll County.



NEW Bridging the Gap: What does it take to bring small and medium-sized producers and retail and food service distributors together? 2 years

M. Holz-Clause, ISU Extension Value Added Agriculture Program

A survey was conducted of key representatives in the Iowa food service and retail food sectors to determine how individual producers and producer groups can best work with this sector. A set of four informational workshops were held in early 2006 for farmers interested in selling to institutional food service groups and retail stores.

Business organization and coordination in niche hog marketing: Comparative analysis of two niche marketers, 2 years (extended to 2006)

J. Kliebenstein and B. Hueth, ISU economics

The two-phase project first considered the economic, business, and legal concerns for niche pork companies in these areas: timing, quality, process verification, business organization, and rate of return. The second phase is focused on incentive design or premium payments to increase producer participation. Alternative premium payment systems will be compared and evaluated for effectiveness in improving pork quality and showing returns for quality improvements.

Community economic impact assessment for a multi-county local food system in northeast Iowa, 2 years

K. Enshayan, Center for Energy and Environmental Education, University of Northern Iowa

This project seeks to document the multiple economic impacts of a cluster of food and farm businesses in Black Hawk and surrounding counties. Included are direct-marketing farms, local vendors suppliers of these farms, and grocery stores and institutions that buy locally grown products.

NEW Determining the methods for measuring the extent of economic and fiscal impacts associated with organic crop conversion in Iowa, 1 year

D. Swenson and L. Eathington, ISU economics, and Craig Chase, ISU Extension, Tripoli

Investigators will use input-output models to look at the economic impact of farmers who are transitioning to organic agriculture in Woodbury County. The county recently approved property tax abatements for transitioning farmers.

Development of a regional wine culture in Iowa, 2 years

W. Johnson, Limestone Bluffs RC&D, Maquoketa

This project will research and create a geographically-based identity for grape and wine production in eastern Iowa. The investigator will work with grape growers and wineries in eastern Iowa to create the first American Viticultural Area (AVA) in the state and will document the economic impacts of wine tourism that would come with this designation. The project has established a wine trail to market the unique characteristics of the region.

according to certified organic and other processing-specific regulations. This project will develop web-based resources for food processors who are interested in processing organically grown foods into finished products and also will fund a workshop for organic food processors in Iowa and surrounding states. See www.organicfoodprocessing.org.

Economic viability of local food marketing for restaurant operations and growers/producers in Iowa, 2 years

A. Sharma followed by C. Strohbehn, ISU hotel, restaurant and institution management program

What are the economic costs, benefits and non-economic factors that influence restaurants to buy and producers to sell locally grown/produced foods? The investigator will look at whether use of locally purchased food can be a competitive advantage for restaurants through increased market share and use of variable pricing strategies, identify economic implications for local growers/producers who wish to establish sustainable partnerships with local foodservice operations, and inform Iowa restaurateurs about the economic viability of local food purchasing.

NEW Functional quality management systems for livestock producers, 2 years

J. Lawrence, Iowa Beef Center; J. Mabry, Iowa Pork Industry Center, and M. Holz-Clause, ISU Extension Value Added Agriculture Program

Investigators will develop a curriculum to help livestock farmers participating in branded programs and niche markets to create a Quality Management System (QMS) for their operations. The program will include an initial farm visit, two workshops and follow-up conference calls to help participants stay on track. Investigators will be recruiting small groups of farmers from among niche market pork producers, beef producers in the Iowa-80 Process Verified Program, family-owned commercial pork producers who outsource some services, and family-owned beef feedlots.

Growing Your Small Market Farm Business planning program, 2 years

S. Shafer and P. Brown Huber, Iowa Small Business Development Center (ISU), Urbandale

The successful Grow Your Small Market Farm Business planning program helps midsize and small specialty niche farmers build their value-added business through writing a business plan, providing a year of one-on-one technical support, developing marketing materials, and training on Quick Books Pro. The grant has been used to recruit new entrepreneurs, expand the classroom offerings from 11 to 15 weeks, bring in a design expert for one day, and develop a newsletter for current and former participants. Eleven businesses and 20 people completed the class in 2005; 11 businesses and 14 people in 2006.

NEW Investigation of economic feasibility of pasture-based dairy operations in northwest Iowa, 1 year

C. Mondak, ISU Extension, Orange City; and T. Olsen, ISU Extension, Storm Lake

Investigators will gather baseline data to determine the economic feasibility of pasture-based dairies in northwest Iowa. They also will look at the potential economic impact of adding 10 to 20 new pasture dairies in the region.

NEW Iowa taste of place project Phase II: Outreach, 1 year

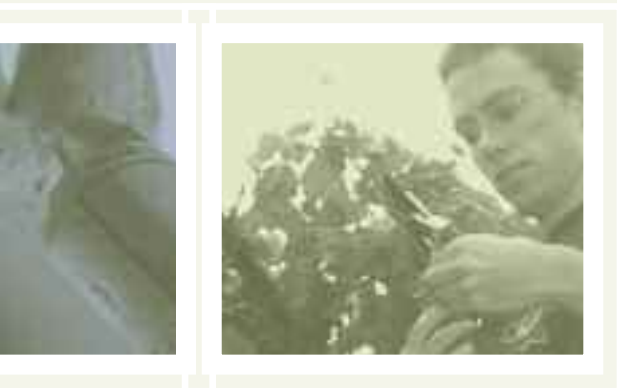
R. H. Saltzman, Iowa Arts Council, Iowa Department of Cultural Affairs, Des Moines

This project includes the production of web-based fact sheets for five Iowa place-based foods, selected as part of a 2005 Leopold Center Marketing Initiative grant. Each fact sheet will consist of text, photos, audio of the producers, information about how to obtain the product, and a downloadable version of the fact sheet. The web site will be based on the successful Iowa Roots® documentary series produced with WOI Radio.

Development of resources for organic food processors in the state of Iowa, 1 year (extended to 2006)

S. Beattie, ISU food science and human nutrition

While there are many resources available for sustainable and organic agricultural producers, resources are lacking for those who wish to process these materials



Leveraging student expertise to solve food production marketing problems, 2 years (extended to 2006)

K. Palan and J. Wong, ISU marketing
Teams of ISU business and agriculture students worked with agricultural producers to develop marketing strategies and plans to support their unique food and fiber businesses. Among them were an apple orchard, wineries, a fruit and vegetable cooperative, an organic dairy processor, and a network of edible bean producers.

Life in Iowa Homecoming Institute, 3 years (extended to 2006)

N. Bevin, ISU Extension
Life in Iowa is an ISU undergraduate academic program that integrates classroom and experiential learning. After preparation on campus, students are placed in Iowa communities for ten weeks during the summer for paid internships and civic engagement projects. The Leopold Center-sponsored interns work with community-based organizations that focus on sustainable agriculture, food systems, and the environment. The program closed with three student interns in summer 2006.

Market Maker for Iowa, 1 year (extended to 2006)

C. Tordsen, ISU Extension, Value Added Agriculture Program
The product is a web-based marketing tool for Iowa producers based upon the Market Maker program developed by the University of Illinois Extension. Using the web site, producers of value-added agricultural products will be able to find processors or markets in Iowa and Illinois. The site also can be used by processors or markets to find producers of value-added agricultural products, or by producers, individuals, cooperatives, groups, or networks to form even broader networks. Market Maker is shown at www.marketmakeriowa.com.

NEW New food entrepreneurs - Value added enterprises for farm profitability, 1 year

R. Graves, Wallace House Foundation, and C. Pardee, Iowa Rural Development Council, Des Moines

This project includes a "Common Ground" study circle process for Iowa producers, small food processors and policy makers to identify areas of public policy change that would enhance Iowa's small food processing sector. Also included is creation of a web site clearinghouse for information for new food entrepreneurs and food processors in Iowa, a mentor's listserv and handbook of basic Q&As for food entrepreneurs on regulations, food safety, financial resources and other types of assistance available.

NEW Niche markets in the agricultural enterprise mix: Farm profit optimization and risk analysis, 1 year

S. Ellis, Iowa Beef Center
The project investigator developed a computer-based interactive program, FARMOR-Niche, which considers the risks and benefits of niche markets. The program features extended enterprise budgets for producing livestock that satisfy niche market requirements, plus other expenses to be included in the analysis of a more integrated niche market.

Organic, natural and grass-fed beef: Profitability and constraints to production in the midwestern United States, 1 year (extended to 2006)

M. Smith, ISU Extension Value Added Agriculture Program; and J. Lawrence, Iowa Beef Center, ISU

This project gauges the average costs of production to achieve current market grade standards for organic, natural and grass-fed beef, and the costs of transitioning to these production systems. Investigators are developing a user-friendly computer spreadsheet tool that farmers can use to quickly evaluate the cost and return potential for these niche market products. Researchers have surveyed local direct marketers and current marketing companies and cooperatives across the United States to determine the sales growth for their projects in the next 10 years.



Pilot project to identify and measure the relevant costs of production for sustainable agricultural products, 2 years

S. Ravenscroft and M. Doran, ISU accounting

How can sustainable agricultural producers better identify and measure their relevant costs of production? The investigators have worked with producers identified in several related Leopold Center marketing projects and with other producers developing unique food and fiber enterprises. They developed a simple spreadsheet to help one beef enterprise create a cost model to help make decisions on product pricing.

NEW Plan demonstration farm to include farm business incubator and educational use, 1 year

L. Barnes, Marshalltown Community College, Marshalltown

This project is developing a master plan for a new Midwest Center for Entrepreneurial Agriculture (MCEA) to be located on 145 acres adjacent to Marshalltown Community College. Planners also will explore the idea of using the demonstration farm as an incubator for farmers who want to learn about non-conventional perennial crops.

NEW Planning a facility for value-added farm business incubation and educational use, 1 year

L. Barnes and T. Deimerly, Marshalltown Community College, Marshalltown

This project complements master planning for the new Midwest Center for Entrepreneurial Agriculture with a feasibility study for locating a community incubator kitchen on the property. Investigators will survey potential users, look at costs and equipment needs, and draft an operating budget and business plan for the kitchen. They expect that an incubator, once established, could

impact four to eight small and midsize producers in food ventures, create 10 to 25 new jobs, and be used for food service training for 75 individuals and businesses.

A proposal to use the conjoint market analysis tool to examine the factors that influence consumer attitudes toward beef products, 1 year (extended to 2006)

B. Mennecke, A. Hendrickson, and A. Townsend, ISU management information systems; D. Hayes, ISU finance; and S. Lonergan, ISU animal science

This study will examine the consumer decision-making process related to beef purchases. Specifically, it will look at how much each attribute (organic, pasture-raised, and others) is valued by consumers relative to other attributes such as appearance and taste. The results could offer useful information that will help producers understand what attributes consumers see as most valuable.

The role of collaborative Community Supported Agriculture: A community, state and regional study, 1 year

C. Flora and C. Bregendahl, North Central Regional Center for Rural Development
What role is played by for-profit, multi-producer Community Supported Agriculture (CSA) enterprises in strengthening local and regional food systems? Specifically, the study determined whether collaborative CSAs in Iowa and the north central United States act as business incubators for single family-owned CSAs. It examined how CSA business decisions and actions inform local agricultural entrepreneurs.

Small and midsize Iowa farmer training program: Marketing entrepreneurship and business planning skills, 1 year

R. Padavich, Strategic Marketing Services and Management and Professional Development Center, University of Northern Iowa

The project surveyed northeast Iowa farmers to determine their needs for new business enterprise training and marketing. It developed a customized training program targeted to small and midsize farmers as well as off-farm agriculture-related entrepreneurs in northeast Iowa.

Southwest Iowa institutional foods survey and producer training program, 2 years

S. Adams, ISU Extension, Malvern

In the first year, the project conducted a survey to determine the potential for locally grown products in a ten-county area of southwest Iowa. A second phase of the project will establish a network of existing organic or natural producers to create a delivery system for products, and to recruit new growers.

NEW Strategies to stabilize locally grown produce for year-round sales: A feasibility study, 2 years

S. Beattie, L. Wilson, and A. Mendonca, ISU food science and human nutrition

Included are a feasibility study for a small, mobile on-farm processing unit (for freezing) that could be used to provide year round, locally grown produce. The team, composed of microbiologists, processing quality faculty and an engineer, will look at costs, food safety issues, conduct a survey regarding willingness-to-pay by consumers and institutions, and determine where such units might be used. They also hope to develop plans and determine resources that would be needed for construction of a pilot unit.

Sustainable agriculture marketing, entrepreneurship and business planning skills, 2 years

J. Starceвич, Indian Hills Community College, Centerville

Project activities include developing and implementing a curriculum on sustainable land management; developing plots for

instructional labs on campus and on the property of participating landowners; organizing a regional consortium of growers, processors, and retailers; helping Area 15 vocational agriculture faculty integrate sustainable agriculture into the high school curriculum; and hosting a seminar series to raise awareness about local foods and regional marketing efforts. These efforts will complete the remaining curriculum for a new Land-Based Business/Entrepreneurship program at Indian Hills Community College.

NEW A survey of currently available commercial broilers originating from organic, natural and conventional production systems for cooked meat yields, meat composition and relative value, 1 year

J. Sebranek and D. Ahn, ISU animal science; and S. Beattie, ISU food science and human nutrition

This project surveys the fat, moisture, fatty acid profiles, and protein content of organic, natural and conventional broilers purchased from a variety of sources.

Taste of place: Place-based foods in Iowa, 1 year (extended to 2006)

R. H. Saltzman, Iowa Arts Council, Iowa Department of Cultural Affairs, Des Moines

The researcher sought out place-based Iowa foods that met certain cultural, geographic and ecological criteria: ingredients must be or have been grown and/or processed in Iowa; the food must have some historical, ethnic, ecological or geographic heritage; and the food must have some kind of "story" related to it, which would make its Iowa connection clear. While it was easy to find foods meeting at least two of the criteria, only seven food items documented met all three standards.

Using contracts to expand produce market opportunities, 2 years

J. Ellis followed by C. Strohhahn, ISU hotel, restaurant and institution management program

Focus groups will be convened to conduct a needs assessment that explores how contracts or marketing agreements can help producers manage the risk of increasing production while assuring foodservice



operators of adequate supplies of high-quality fresh produce. One of the project goals is to develop a producer tool to inform decisions on developing production contracts with food service and retail food establishments. Preliminary results were shared at four workshops in early 2006.

POLICY INITIATIVE

NEW Beginning and midsize farm bill analysis and education initiative, 2 years

M. Duffy, ISU Beginning Farmer Center and ISU economics; and T. Bruckner, Center for Rural Affairs, Lyons, Nebraska
Project investigators will conduct an analysis of farm policies that impact sustainable, midsize farmers and ranchers (those just beginning as well as those who are beginning again by converting to niche markets and/or sustainable farming systems). The analysis will include the current farm program and 1031 like-kind exchanges, beginning farmer initiatives focused on access to land and markets, value-added and conservation programs that support sustainable farming systems serving high value market products, and new policy options for the 2007 Farm Bill.

Defining farm types: Policy research considerations, 1 year

ISU Beginning Farmer Center staff
The common way for the government to classify U.S. farms is by gross annual sales. This project looks at other ways to categorize farms such as acreage, harvested cropland, or animal units. A simulation model will be created to gauge the impacts of a given policy on various sizes and types of farm operations.

Early rounds: Farmers evaluate implementation of the Conservation Security Program (CSP), 2 years

R. Karp, (formerly) Practical Farmers of Iowa, Ames
Farmer knowledge and experience are being used to develop a set of recommendations and action steps to achieve effective CSP implementation. These recommendations will include identifying gaps and weaknesses in CSP procedures and providing ways to

address these shortfalls. Encouraging a strong group of farmers committed to the program will help increase understanding and participation in CSP.

NEW Evaluating the Conservation Security Program utilizing the perceptions and economics of producer participation: Implications for land stewardship in Iowa agriculture, 1 year

J. Kliebenstein and D. Reich, ISU economics
This study will focus on four watersheds in Iowa currently included in the Conservation Security Program (CSP), sampling farmers for their participation in and perceptions of the program as a means for measuring program effectiveness. Work will include a survey of changes in producers' behavior due to CSP payments, and a budgetary analysis of CSP participants' short- and long-run profitability using farm data collected from in-depth interviews.

NEW Farm Bill listening sessions, 1 year

L. Adcock, Iowa Farmers Union Education Foundation, Ames; K. Starkweather, Center for Rural Affairs, Lyons, Nebraska; and N. Ritchie, League of Rural Voters, Minneapolis, Minnesota
Six listening sessions were held around the state of Iowa during early 2006. Farmers were asked to comment specifically on the aspects of the farm bill which impact sustainable agriculture and the environment, such as CRP, CSP, and "green payments." Information will be summarized in a written document and made available to farmers and the public.

Improving the impact and benefits of USDA research and grant programs to enhance midsize farm profitability and rural community success, 2 years

J. DeWitt, ISU entomology
Research and analysis is being conducted with the Center for Rural Affairs to identify options and strategies to target more of current federal funding and improve the results of USDA efforts for beginning and midsize farmers. Four key federal agricultural research, marketing, and business/agricultural enterprise development programs were considered.



A survival strategy for small and medium-sized farms, 1 year

R. Ginder, ISU economics
Some smaller farms in the Midwest have used cooperative agreements to remain competitive in a difficult marketing environment. These farms will be included in a database and the investigator will evaluate the effectiveness of eight of these groups in enhancing the economic standing of their members.

Taking the next step: Building a platform for performance-based stewardship payments, 2 years

C. Flora, North Central Regional Center for Rural Development, Ames
How useful are conservation incentives in making significant environmental improvements? This portion of a larger study will unite predictions from a simulation model and an economic analysis in a southeast Minnesota sub-watershed to determine if and how the real cost of land change is supported by stewardship payments. Iowa's Rathbun Lake Watershed Alliance will be involved in making policy recommendations in this area.

NEW Women, land and legacy: Agricultural policy for changing land ownership, 1 year

C. Johnson, Women, Food and Agriculture Network (WFAN), Iowa City, and D. O'Brien, Women, Food and Agriculture Network, Atlantic
Project investigators will create and circulate a white paper to highlight the political and economic power of women landowners and farmers and clarify their needs and priorities to those involved in drafting the 2007 Farm Bill. Iowa input on the 2007 Farm Bill was collected at 10 facilitated listening sessions held across the state in February and March 2006.

remaining pre-initiative

competitive grants

The Leopold Center provided no-cost extensions to two projects that were part of the earlier broad-based competitive research program. They were completed by the end of FY 2006 with final reports due at the end of 2006.

LIVESTOCK MANAGEMENT

Evaluating pork production systems for niche markets, 3 years (extension granted to 2006)

*D. Stender, Cherokee County
ISU Extension, Cherokee*

The investigator is working with several northwest Iowa producers to obtain on-farm data for comparing hoop and confinement operations. Information compiled on seasonal environment, nutrition, genetics, and operator management differences in sustainable systems appears in a database created for the project.

WATER QUALITY

Economically sustainable riparian buffer to promote bank stability and reduce gully erosion and phosphorus runoff in the Loess Hills, 3 years (extension granted to 2006)

M. Kelly, (formerly) ISU natural resource ecology and management, PI responsibility assumed by J. Colletti, ISU College of Agriculture Administration

Investigators evaluated the effectiveness of a tree-based riparian buffer in the Deep Loess Hills (western Iowa) for suitability in managing landscape issues such as erosion and phosphorus movement. Field samples have been collected that provide data on the standing crop of above-ground biomass and plant phosphorus uptake.













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Environmental savings for the printing of this report:

-  9.68 trees preserved for the future
-  27.94 pounds waterborne waste not created
-  4,110 gallons wastewater flow saved
-  455 pounds solid waste not generated
-  896 pounds net greenhouse gases prevented
-  6,854,400 BTUs energy not consumed

Savings from the use of emission-free wind-generated electricity:

-  1,551 pounds air emissions not generated
-  Displaces this amount of fossil fuel:
3,690 cubic feet natural gas unused

Saving from the use of wind-generated electricity are equivalent to:

-  Not driving 1,680 miles OR
-  Planting 105 trees

Join us in preserving our natural resources.



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