

University of Nebraska-Lincoln
Sustainability Initiatives
September 2009

(Updates are highlighted in red.)

Chancellor's Commission on Environmental Sustainability

A faculty, staff, and student committee was formed in Fall 2008 to develop and recommend to the Chancellor, and to other members of the administration where appropriate, environmentally responsible practices and policies, to communicate the environmental and ecological implications of University policies and decisions, and to develop and recommend programs designed to educate the UNL community about environmentally and ecologically responsible practices. (10/2008)

Transportation

Walking & Biking

Enhancement of City of Lincoln Trail System through Antelope Valley Project trail connections. (4/2008)

To encourage bicycle use on campus and funded by a grant to UNL, trail extensions were constructed along the City's Huntington-Leighton Trail on East Campus and along the X Street railroad right-of-way within the City Campus. (4/2008)

Constructed larger sidewalks on campus to accommodate pedestrians and bicyclists. Also makes snow removal more economical. (4/2008)

Providing bike parking areas for each campus building to encourage bicycle use on campus. (4/2008)

Parking

Conversion of surface lots to parking decks opens up green spaces or locations for new educational facilities. (4/2008)

Implemented reserved parking spaces to encourage carpooling by faculty, staff, and students. (4/2008)

17th and R Parking Garage Project to include a pervious pavement parking area and is planning to capture rain water from the top roof deck to water the adjacent turf and planting areas. (9/2009)

Discounted Bus Pass

To encourage the use of public transportation, faculty and staff may purchase local bus monthly passes for \$10/month, amounting to over 23% discount off the general public price. Faculty, staff, and students with a UNL parking permit are eligible for a free bus pass during the period of their permit. (4/2008)

Bio-Diesel &

In 2006 UNL switched its transit buses and diesel-powered work vehicles to bio-

- E10 Gasohol** diesel (5% soy diesel), and gasoline-powered vehicles to E10 gasohol. (4/2008)
- Passenger vehicle selection and procurement includes a life cycle cost analysis, which preferences more economical and fuel efficient vehicles. (9/2008)
- Anti-idling policy implemented to reduce fuel waste. (5/2008)
- To extend the life of tires and to improve vehicle efficiency, nitrogen is used to better maintain tire pressure. (4/2008)

Facilities Management and Planning

- LEED Standards for Building Construction** Leadership in Energy and Environmental Design (LEED) is a branch of the U.S. Green Building Council and provides standards and a rating system for the design and construction of sustainable buildings. (4/2008)
- NU campuses have adopted the LEED building standards for new construction. The International Quilt Studies Center and Museum and the Jackie Gaughan Multicultural Center will be UNL's first buildings constructed using LEED standards. In addition, the following buildings are in the planning and design stage and will also be constructed or renovated to meet LEED standards: Physical Sciences Building, Keim Hall Renovation, Whittier Renovation, NanoScience Facility, 17th and R Residence Hall. (4/2008)
- The International Quilt Study Center and Museum was honored April 19, 2009 as UNL's first building to meet LEED Silver rating from the U.S. Green Building Council. (9/2009)**
- Stormwater Management** **Projects are now designed to contain stormwater with rain gardens, bioswales, etc. The water is returned to the ground more slowly this way and reduces erosion. (9/2009)**
- UNL has a SMS4 NPDES permit which requires the University to implement an effective Stormwater Management Plan/Program (SWMP). UNL's plans cover everything from landscape to building construction operations in the UNL SWMP. Each project that disturbs greater than one acre has to have individual SWMPs. (4/2008)
- Custodial Services** Chemicals - Custodial Services uses Green Seal approved or low volatile environmentally preferred cleaning chemicals dispensed through metered chemical management systems. (9/2008)
- Paper and recycling - All restroom paper products meet the EPA standards for post-consumer recycled content. All cardboard packaging and plastic product containers used by Custodial Services are recycled after use. (9/2008)
- Microfiber - The extensive use of reusable microfiber cleaning clothes, wet mops and dust mops eliminates waste, minimizes the use of chemicals, and increases the effectiveness of the cleaning procedures. (9/2008)
- Matting - High-performance matting systems trap dirt, moisture, and pollutants

before they get into the buildings. (9/2008)

Equipment - HEPA filtered upright vacuum cleaners carry the Carpet and Rug Institutes Seal of Approval. Low moisture carpet extractors decrease drying time, discouraging mold and mildew. Powered floor scrubbing machines use metered solution systems to optimize the use of water and chemical. Electrical powered cleaning equipment is on a set preventive maintenance schedule. Properly maintained equipment is safe and efficient to operate and has a prolonged working life. (9/2008)

Bio-renewable products – Foaming hand soap and graffiti remover made from bio-renewable materials. (9/2009)

Custodial Services Adopted an Environment Responsibility Statement

http://fmp.unl.edu/custodial/Environmental_Responsibility_Statement.pdf

(9/2009)

Landscape Services

Tree Campus USA

As one of nine universities, UNL was designated a Tree Campus USA by the Arbor Day Foundation in November 2009. (9/2009)

As part of a Tree Campus Tour 2009 grant, Landscape Services planted 100 trees around the City and East Campuses' parking lots. (9/2009)

Watering

UNL has adopted an Irrigation Management Plan that complies (and conserves water in many places) with the City of Lincoln's water use restrictions (<http://www.unl.edu/landscape/watermgtpplan>). (4/2008)

Snow Removal

Ice melt used during snow and ice removal is environmentally friendly to plants, turf, and natural water systems. (4/2008)

Landscape Plantings

UNL plants trees on campus around buildings to reduce cooling costs. (4/2008)

UNL planted a 0.75 acre site with trees and shrubs to create a carbon sink demonstration area on east campus. (4/2008)

Design efforts underway to utilize low maintenance (low water) plants in many areas of the campus. (9/2009)

The landscape (green spaces and trees) is designed to reduce urban heat-island effects. Utilizing low maintenance and low-water use plants in planting areas with no automatic irrigation and drought tolerant fescue turf grass. (9/2009)

Integrated Pest Management

UNL uses an Integrated Pest Management Strategy for campus landscape. <http://www.unl.edu/landscape/mstandards/index.shtml#pest>. (4/2008)

Mulching Mowers

Landscape services uses mulching mowers which puts nutrients back into the soil and no grass clippings yard waste is collected. (4/2008)

- Leaf Collection** Leaves are collected and taken to the City of Lincoln to make compost. Landscape Services is given mulch in return. (4/2008)
- Green Roof Demonstration Project** **Initiated an environmental demonstration project on campus: A 2300 SF green roof at Physical Sciences Building. (9/2009)**
- Solar Trash Container** **Landscape Services has purchased and is testing the feasibility of a solar trash container in a high traffic area on campus that compacts the trash and therefore allows staff to make fewer trips to empty the trash container. (9/2009)**
- Vehicles** **Landscape Services is looking into purchasing a biodiesel truck, for hauling recycling, that can be converted to using cooking oil as the primary fuel source. (Fall 2009)**

Recycling and Waste Management

- Recycling** Reducing amount of refuse going to landfill **(35% in FY 2009)** and reducing our fees for the landfill. Recycling program is also applying for grants to boost the campus recycling efforts with more containers of all sizes to meet increased demand. Recycling at UNL includes:

Aerosol cans	Pallets
Batteries	Plastic
Cardboard	Scrap Metal
Computers	Smoke Detectors
Cooking Oil	Tin Cans
Engine Oils	Tires
Fluorescent and HID Lamps	Toner Ink Cartridges
Newspaper	Wood
Office paper	

(4/2008)

- Yard Waste** Trees and shrubs removed or pruned on campus due to construction and maintenance are chipped and reused as mulch on campus.
- Pallets from department deliveries are collected and either recycled at a recycling center or chipped up for mulch paths on campus.
- Recycled concrete and asphalt grindings are recycled as surface material in gravel parking lots and storage areas. (4/2008)

- Animal Waste** Composting is used at all IANR Research and Extension Centers' livestock operations. The manure from the Center's Animal Sciences pens is taken to ARDC where it is composted. (4/2008)

- Dining Services** All University Dining Service Centers recycle cardboard, tin cans, aluminum cans, No. 1 and 2 plastic containers, plastic milk containers, and spray cans.

Used cooking oil is sold to KCI Restaurant Services d/b/a Kruger Commodities for .07 per lb. (4/2008)

Use of Recycled Materials UNL purchases paper towels containing 40% post consumer waste and toilet paper containing 20% post consumer waste.

UNL's Printing and Copy Services program uses several types of recycled paper made with a percentage of post consumer content, uses soy/vegetable based inks, uses Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) paper vendors, recycles all paper waste including office paper, recycles all metal plates, and oversees a toner cartridge pickup and return program.

UNL recycles building materials that are still in good shape during building remodels.

Waste Oil from Landscape Services equipment is collected in 200-250 gallon storage tanks and picked up by a vendor that recycles the oil as a heating medium for their storage tanks, and as burner fuel for a portable asphalt hot mix plant.

Used tires are collected from department equipment. A local vendor picks up the tires and grinds them up to be re-used as the material under playground equipment, rubberized asphalt for highways and roads, and athletic fields when installing field turf. (4/2008)

Double Sided Copies UNL encourages all copiers to be set to make double-sided copies as the default. (9/2009)

DEQ Grant Landscape Services received a \$6,000 grant for the Department of Environmental Quality to purchase 200 new recycling containers for use on campus. (9/2009)

Energy & Utility Plant Operations

Ground Source Heat Pump The Whittier Building's renovation includes the use of ground source heat pumps for heating/cooling the building. (9/2009)

Power Plant Upgrades UNL Central Utility Plants have insulated steam piping, valves and expansion joints. Boilers and chillers are loaded and operated for maximum efficiency and minimum pollution. Virtually all steam condensate is returned to the plants. (Pipe insulation extends to steam, chilled water, and heating water piping in mechanical rooms). (4/2008)

Power Plant Water Treatment UNL Utilities has a water treatment process that limits the amount of chlorine discharged to the waste water stream. Utilizing a RO two pass system which increases boiler blow down cycles from 30 to 100, saving water, chemicals and energy. Water from the RO system flushing cycle is reused for tower water makeup. (4/2008)

Lighting UNL Facilities has upgraded most fluorescent light fixtures with more efficient T8

Fixture Retrofit	lamps and electronic ballasts. Almost all incandescent lamps have been replaced by low-mercury fluorescent or LED lamps (except special-purpose fixtures). (4/2008)
Hallway Lighting	UNL reduced lighting in buildings' hallways by 75% to reduce utility consumption. (9/2009)
Room HVAC Controls	UNL's Energy Management Control System provides independent room temperature control in new buildings and all major building renovations. These digital thermostats allow facilities management to reduce energy consumption on weekends, nights and holidays. Where occupancy detectors have been installed, energy consumption is reduced whenever the space is unoccupied. Whenever possible, air handling systems are shutdown completely during unoccupied periods. (4/2008)
Laboratory Exhaust and Fume Hood Controls	UNL's Control Systems Group is testing a prototype which allows fume hoods and laboratory exhaust to be turned down or off when not in use. A typical fume hood can easily consume the same energy in a year as a small house. Once this technology is deployed across campus this initiative will reduce UNL's utility costs significantly as it reduces our carbon footprint. (4/2008)
Roof Insulation	When UNL roofs are replaced, additional insulation is installed to improve the R-factor rating. This saves energy and reduces carbon by reducing the amount of energy required to heat and cool UNL buildings. (4/2008)
	UNL utilizes more highly reflective materials (white roof membrane) which also reduces the heat island effect of a darker roof. (9/2009)
Free Cooling Economizer	UNL's Energy Management Control System is programmed to maximize outside air for cooling whenever conditions are right. This economizer cycle reduces the use of fossil fuels for cooling during those times when the outside air is cool enough to help meet the cooling load in building with large heat loads (people, lights, computers, laboratory equipment). (4/2008)
Supply temperature / pressure reset	UNL's Energy Management Control System is programmed to reset the temperature and volume of air supplied for cooling. This reset program provides the required cooling using the least expensive combination of electricity and chilled water. (4/2008)
Fan Wall Technology	UNL has recently chosen to use fan walls (arrays of small fans) for cooling and heating instead of the traditional large single fan systems. These smaller fans can be staged (using only as many as necessary for the current load) and operate at a sweeter point (most efficient) on the fan curve. This means reduced electrical consumption compared to the traditional single large fans designs. (4/2008)
Low VOC Paints	UNL's Building Systems Maintenance uses only low VOC paints, varnishes and chemicals. (4/2008)
Low	All new refrigeration equipment uses ozone-friendly refrigerant gases and

Fluorocarbon Refrigerants	whenever existing equipment requires service, it is converted to use a non-CFC refrigerant. (4/2008)
HVAC Retrofits	Several large campus buildings have been completely retrofitted with more efficient variable volume air conditioning systems and most of the older fans have had variable-speed drives installed. These systems are significantly more efficient than the earlier constant volume systems. All new buildings are designed with more efficient systems. (4/2008)
Chiller Replacement	UNL replaced an old chiller that served the Animal Science Meat Lab with a modular rack mounted scroll system. This system is significantly more efficient than the old chiller. (4/2008)
Windows	UNL has replaced old inefficient single pane windows in several buildings with new thermal pane systems. In addition to reducing our carbon footprint, the new windows provide significantly better comfort during extremes of hot or cold, or windy Nebraska weather. All new buildings are designed using energy efficient thermal pane windows. (4/2008)
Active Energy Conservation Program Management	UNL's BSM (Building Systems Maintenance) employs two full-time energy engineers to actively pursue energy conservation initiatives and to develop and monitor efficient operations of all UNL's HVAC systems. With over 300 heating and cooling systems between the two Lincoln campuses this is necessary to keep everything tuned up for optimum performance at the least cost and lowest carbon footprint. (4/2008)
Timely Maintenance	Water, air, and steam leaks are identified and fixed as quickly as possible to minimize waste. (4/2008)

University Dining Operations

Dining Operations **In March 2009 University Dining Services converted to a trayless system to reduce food waste, improve environmental impact, and reduce costs. (9/2009)**

Good, Fresh, Local (GFL) Initiative University Dining Service (UDS) continually encourages student involvement in the GFL (Good, Fresh, Local) University of Nebraska-Lincoln Sustainable Food Project. The GFL Project is designed to serve traditional meals and individual menu items where the menu ingredients:

Come mostly from small LOCAL (Nebraska) farmers and producers

Are produced using sustainable agriculture practices

Are seasonal

Include organic products

In January 2008 a group of UNL students planned the events for Focus The Nation, A Collaborative Discussion on Global Warming. Students worked with University Dining Service staff members who work with the GFL project to plan a dinner that presented information about the carbon footprint impact for that dinner. This

dinner kicked off a week of student-planned activities related to global warming. (10/2008)

Food Surplus Donation

During close downs and summer conferences overproduction items are donated to "Second Harvest," a program administered by the Lincoln Food Bank which provides food to several agencies including Matt Talbot Kitchen and Peoples City Mission. Second Harvest provides containers for the food and picks it up. (4/2008)

Community Supported Agriculture

In September 2005, University Dining Services/University Housing initiated the GFL (Good, Fresh, Local), the University of Nebraska-Lincoln Sustainable Food Project. This project began at Cather/Pound/Neihardt Dining Services and in 2007 expanded to the East Campus Union Dining Services and University Dining Services' Catering Department. The project is designed to serve traditional meals and individual menu items where the menu ingredients come mostly from Nebraska farmers and producers that use sustainable agricultural practices. Products purchased include meat, poultry, fish, eggs, grains, produce, nuts, jams/jellies/honey, salad dressings, and sauces. (4/2008)

Vending Machines

Soda and snack machines are controlled by occupancy sensors that turn the units off when no potential customers are nearby. (4/2008)

UNL Housing

Ground Source Heat Pump

The Robert E. Knoll Residence Center's construction includes the use of ground source heat pumps for heating/cooling the new residence building. (9/2009)

Housing Recycling

Unused paint, wood scraps, etc. are given to the UNL Theater Department.

UNL's residence hall residents also recycle their mixed office paper, newspapers, plastics, cans, and glass. (4/2008)

Eco-Chic Residential Living Unit

In Summer 2008 students at the University of Nebraska-Lincoln showed that it is chic to show their environmental awareness by decking out their residence hall rooms with recycled, green and sustainable furnishings and décor at a specially outfitted "eco-chic" room at Smith Hall.

The hall room was sponsored by the Association of Students of the University of Nebraska, Housing, Admissions and University Communications. Its décor mixes secondhand accessories and dishware, eco-friendly personal care and cleaning products, and a few new items that reflect environmentally responsible manufacturing practices. The project's goal is to show students that it can be simple, affordable and stylish to care for the environment. (10/2008)

Campus Recreation

Water Bottle

Campus Recreation installed additional water bottle stations to minimize the impact of plastic water bottles on local landfills. When hosting events and activities,

Stations	recognized student organizations and student service departments are encouraged to provide water using cambros available through the Student Involvement office in lieu of offering bottled water. (10/2008)
Low Flow Shower Head Installation	Installed lower flow shower heads to save on water consumption at the East Campus Activities Building. (9/2009)
D.E.Q. Grant	Campus Recreation was awarded a grant of \$44,000 from the Nebraska Department of Environmental Quality for recycling, sustainability, and environmental awareness. (9/2009)
Water Bottle Stations	Campus Recreation installed additional water bottle stations to minimize the impact of plastic water bottles on local landfills. When hosting events and activities, recognized student organizations and student service departments are encouraged to provide water using cambros available through the Student Involvement office in lieu of offering bottled water. (9/2009)
Recycle Stations	Purchased and placed recycling containers throughout city and east campus indoor recreational facilities. (9/2009)
Volleyball Game Recycling	Implemented recycling at all UNL volleyball matches in the Nebraska Coliseum. We worked in conjunction with the Athletic Department to coordinate this project. (9/2009)
Nebraska Crumb Rubber	Utilized recycled Nebraska crumb rubber in its installation of synthetic turf recreation fields at Mabel Lee Hall. (9/2008)
Capture Energy from Cardiovascular Equipment	Installed an innovative mechanical system that captures kinetic energy from applicable cardiovascular equipment, converts it to electricity, and sends it into the University's electrical grid. (6/2009)

Purchasing

The Purchasing Department pursues the promotion, development and procurement of environmentally preferred goods and services whenever possible. The Purchasing Department will work with departments, employees, contractors and vendors alike to seek out and provide resources and information that will enable our customers to make informed purchasing decisions, while promoting environmental stewardship.

The Purchasing Department is committed to buying more environmentally preferable goods and services as long as they meet our performance needs and they are available within a reasonable period of time at a reasonable cost. By including environmental considerations in our procurement decisions, along with our traditional concerns with price, performance and availability, we will remain fiscally responsible while promoting products and services that have a reduced

effect on human health and the environment. (4/2008)

Printing Services

University Printing Services uses soy/vegetable inks and paper supplied from Forest Stewardship Council (FSC) Certified suppliers. UNL utilizes chemical-free plating process and advanced press software saves set-up sheets and decreases waste. University Printing Services received a Certificate of Recycling Excellence from Midland Recycling for its on-going recycling efforts. (4/2008)

Athletics

Recycling

The Athletic Department is partnering with Recycling Enterprises of Nebraska, Inc., in an effort to cut down on waste at athletic events. Beginning with the 2008 season, a recycling bin was placed next to each trash receptacle at all athletic venues. These bins are used to collect plastic bottles and cups which are recycled.

Fans are asked to pick up the area surrounding their seats during and after games and events, and dispose of the materials accordingly, placing their plastic bottles and cups in the recycling bins, and all other trash in the trash bins.

Last season, approximately 60 percent of the trash hauled out of Memorial Stadium was plastic. With five home games to begin the season in what has historically been hot weather in Lincoln, beverages will likely figure largely into concession sales, making the new recycling initiative a timely endeavor. (10/2008)

University of Nebraska Press (UNP)

Hardcover

All book dust jackets are made from 10% post consumer recycled paper.

Book Publishing

Boards—the cardboard underneath the book cloth that gives the books their hard structure—are 100% recycled product. The internal pages are printed on paper that is 30% post consumer recycled, is FSC-Certified Mixed Sources, and is processed chlorine-free. The ink used consists of 30% vegetable oil and 70% petroleum. (10/2008)

Paperback

Book Publishing

UNL uses a non-petroleum-based solvent in its printing process that is derived from crops. This solvent allows the printer to lower oven temperatures by 30% (thus conserving energy use) and reduces water and ink usage by 25% to 40%. Nearly all book manufacturing plants these days recycle approximately 99% of all of their paper waste. (10/2008)

Journal

Publishing

UNP's twenty journals, each of which includes one to four issues annually, are being published more sustainably than ever. Copyeditors return manuscripts to UNP electronically rather than as hard copies, and journal editors receive page proofs from UNP in the same way. Where we once sent manuscripts, covers, and other files to the printer on compact discs, we now transfer these over the Internet. (Materials for the books we publish are also handled in this way). Besides reducing paper, packaging, and CD use, we have also cut days out of the time required to

bring a journal to print and saved significant dollars in overnight shipping costs. (10/2008)

Operations UNP has adopted the increased use of digital media kits, direct mail, and promotional flyers, all of which are e-mailed to the media and potential customers instead of being printed and sent via post. We maintain an active Web site and Web blog for taking orders and promoting our books electronically. We reprint a select number of titles digitally each year. (10/2008)

Student Organizations & Programs

Partners in Pollution Prevention The University of Nebraska-Lincoln's (UNL) Partners in Pollution Prevention (P3) program has helped both area college students and Nebraska businesses since 1997. P3 is an outreach assistance program operated by the University of Nebraska Extension and College of Engineering and funded by the USEPA Region VII, the Nebraska Department of Environmental Quality, and a wide variety of industrial partners.

Undergraduate student interns provide one-to-one Pollution Prevention assistance to Nebraska businesses by performing waste assessments or other waste reduction projects, and providing each client with a written report detailing waste minimization suggestions. Clients who have participated in this program over the years include dry cleaners and auto body shops, as well as large pharmaceutical and other large manufacturing plants. (10/2008)

Emerging Green Builders The Emerging Green Builders – Nebraska Chapter was organized in April 2006 for two purposes: to inspire and empower young leaders in the “green” building movement and to promote environmentally responsible design on our campus and in our community (10/2008)

Roots ‘n Shoots Student Environmental Group See University Dining Operations’ *Good, Fresh, Local* (GFL) initiative above under “University Dining Operations. (10/2008)

2008 E. N. Thompson Forum on World Issues Lecture Series As part of the 2007-2008 EN Thompson Forum on World Issues Lecture Series dedicated to environmental issues, UNL students joined a nationwide effort to engage in an interdisciplinary discussion on global warming. The national dialogue entitled "Focus the Nation" included low carbon foot print meals, professor lectures, webcasts, and political roundtable discussions with elected officials. The Emerging Green Builders recognized student organization replicated a residence hall room in the NE Union furnished/stocked with environment friendly durable goods and products. (10/2008)

UNL Academic Programs in Environmental/Sustainability Emphasis

Graduate Programs PhD - Agricultural & Biological Systems Engineering as specialization in the unified Engineering PhD

PhD & MS - Environmental Studies
 PhD & MS - Natural Resource Sciences
 MS - Agricultural and Biological Systems Engineering
 MS - Environmental engineering
 MS - Mechanized Systems Management
 MS - Water Resources Planning and Management
 Certificate - Food Safety & Defense Graduate
 (10/2008)

Undergraduate Programs

Environmental Programs

Environmental Restoration Science
 Environmental Science
 Fisheries and Wildlife
 Grassland Ecology and Management
 Natural Resource and Environmental Economics
 Turfgrass and Landscape Management
 Water Science

Sustainability Programs

Agronomy - Agroecology and Soil Science Options
 International Agriculture and Natural Resources Minor
 Agricultural Economics –Livestock Industries and Public Policy Options
 Agricultural Education - Environmental Education Minor
 Energy Sciences - energy sustainability including wind, solar and biofuel energy minor
 Insect Science - Integrated Pest Management Option
 Plant Protection Sciences
 Pre-Forestry Program

(10/2008)

UNL Research Initiatives and Programs/Events

Water Law, Policy and Science Conference <http://watercenter.unl.edu/>

Nebraska Center for Energy Sciences Research <http://ncesr.unl.edu/>

Center for Applied Rural Center for Applied Rural Innovation (cari.unl.edu), which focuses on sustainable agriculture, leadership, and economic development. Some of their programs

Innovation

include:

- "Buy Fresh, Buy Local"- marketing/outreach initiative for locally grown food products (<http://www.buylocalnebraska.org>).
- Nebraska Cooperative Development Center - cooperative based business development (<http://ncdc.unl.edu/ncdcj/pages/index.jsp>).
- Extension workshops on organic farming and sustainable agriculture (8 workshops in 2007-2008).
- Organic farming initiative.
- Various publications related to agricultural sustainability and diversity (<http://cari.unl.edu/diversity.shtml>).

UNL Publications

Landscape Sustainability

(<http://www.ianrpubs.unl.edu/epublic/live/g1405/build/g1405.pdf>)

"Crisis and Opportunity: Sustainability in American Agriculture," published by the University of Nebraska Press (<http://nebraskapress.unl.edu/product/Crisis-and-Opportunity,673343.aspx>)

"Changing the Way American Farms: Knowledge and Community in the Sustainable Agriculture Movement," published by the University of Nebraska Press ([http://nebraskapress.unl.edu/\(S\(1ek3ms55yzop1z55cjdayr3x\)\)/product/Changing-the-Way-America-Farms,672339.aspx](http://nebraskapress.unl.edu/(S(1ek3ms55yzop1z55cjdayr3x))/product/Changing-the-Way-America-Farms,672339.aspx))

"Impact of Sustainable Agriculture Programs on U.S. Land Grant Universities," by UNL professor Charles Francis, et al
(<http://www.ianr.unl.edu/ianr/csas/cur/cur14.htm>)

Enhancing Rural Sustainability project, University of Nebraska Public Policy Center (http://ppc.unl.edu/program_areas/documents/ers.htm)