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# NEB NEWS

The Newsletter of the Nebraska Natural Resources Conservation Service

## NRCS Technical Assistance Improves Irrigation System Resulting in Water and Fuel Savings

By: Joanna Pope, NRCS Public Affairs Specialist

Phelps County farmer Vernon Nelson knew that he wanted to upgrade his irrigation system from flood irrigation to center pivot. With over 3,000 irrigated acres Nelson wanted a system that was more efficient. The Natural Resources Conservation Service (NRCS) worked with Nelson to design an irrigation system that is now providing significant savings in diesel costs and inches of water pumped.



Photo by: Joanna Pope, NRCS

**NRCS Civil Engineering Technician Kim Kolling helped designed Vernon Nelson's center pivot to operate at its highest efficiency, reducing the amount of water pumped onto the field and saving energy.**

Nelson visited the NRCS office in Holdrege, Neb. There he learned how the Environmental Quality Incentives Program (EQIP) could help him upgrade his irrigation system and that NRCS could provide technical help.

EQIP is a voluntary conservation program that provides eligible farmers and ranchers financial and technical help with conservation practices on agricultural land. The Ground and Surface Water Conservation funds, available through EQIP, help land-owners maximize water savings on irrigated land. This includes the conversion to more efficient irrigation systems – like center pivots. Nelson now has three center

pivots installed through EQIP and is currently working on installing a fourth.

“NRCS provides a real service. EQIP helps you get the pivot paid for, and the NRCS staff makes sure the pivot system is installed right,” Nelson said.

Making sure the pivot is properly engineered and operating efficiently takes time and skill. Each pivot installation is unique. NRCS engineering staff Allen Gehring and Kim Kolling worked with Nelson to custom design his center pivot system.

**Please turn to  
“Pivot” on Page 2**

## Helping People Help the Land

# Pivot Continued from Page 1

“There is no ‘one size fits all’ when it comes to installing a pivot,” Kolling said. “The amount of water the well can pump, the efficiency of the pump, soil types, topography, crop rotations and other factors all need to be considered if a pivot is going to operate at its optimum efficiency.”

A properly installed center pivot can greatly reduce the amount of water applied to a field each year. Nelson calculated from his flow meter that the amount of water he was pumping before the center pivots were installed was about 21 inches per acre.

After the center pivots were installed the amount of water applied dropped to an average of 12 inches per acre.

Nelson was so impressed with his water and fuel savings he installed center pivots on all of the 3,000 irrigated acres he operates. The conversion on these acres equals an average water savings of over 730,000 gallons per year!

The potential water savings for Phelps County is huge, according to Kolling.

“Let’s assume that all of the fields that switch to pivot irrigation save an average of nine inches of water. There have been about 78 EQIP contracts in Phelps County converting fields to pivot irrigation. That means these EQIP pivots are pumping about 2 billion fewer gallons of water each year, and that’s just in Phelps County alone,” Kolling said.

The energy saved by converting to a pivot is also substantial. Since the well is not pumping as much, less energy is needed. Nelson figures that he is now saving about \$7,000 a year in diesel costs.

Nelson had been using no till on a small scale for about five years, but after converting to center pivots Nelson has planted all of the acres he operates using no till. Converting to no till has saved Nelson even more water and energy.

No till only minimally disturbs the soil during planting. By not disturbing the soil the moisture in the soil does not evaporate as easily since it is not exposed to the air by tillage. The high level of residue left on a no till field also works as a sponge that absorbs and holds moisture on the field. Nelson figures that he is now saving an additional six inches of water by switching to no till. Keeping the water on the field also improves soil quality by reducing erosion and runoff.

No till also results in fuel savings. No till means fewer trips across the field with the tractor – no hilling, disking, or cultivating. This saves wear and tear on machinery and reduces the amount of fuel needed to grow a crop. Nelson estimates that switching to no till has saved him about 8,000 gallons of fuel a year.

“It’s been a positive chain reaction. EQIP helped me convert to pivots. Converting to pivots helped me switch to no till. These changes have had tremendously positive results on my farm,” Nelson said.

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**- Vernon Nelson**

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Kolling is currently working with Nelson on his fourth center pivot installation. Since the existing pump will not be upgraded for a center pivot, Kolling is working with Nelson to ensure the pivot installed will work as efficiently as possible with the existing pump.

“The system I designed is balanced to provide optimum pump, fuel and water efficiencies for the total irrigation system,” Kolling said.

For landowners like Nelson having that kind of expertise is invaluable.

“Everyone at NRCS has been great. Their assistance is an asset to the farming community. If landowners aren’t using their assistance, then they’re missing out,” Nelson said. ♦

# NRCS Helps Plant Seeds of Hope at Healing Garden

By: Joanna Pope, NRCS Public Affairs Specialist

A small seed can grow into something great. That is the symbolic idea behind the AiKiRuti Healing Garden. AiKiRuti – pronounced I-key-ru-dee – is a project started by members of the Winnebago Tribe. AiKiRuti, which means “helping hand”, hopes to be a helping hand in fighting drug and alcohol abuse in the Winnebago Tribe and their northeast Nebraska community.

The Healing Garden was started in 2002 when over 100 varieties of indigenous plants significant to the Winnebago people were planted at the one-acre site in Winnebago, Neb. Members of the community worked to prepare the site for planting. The Natural Resources Conservation Service supplied seed for the garden through the Nebraska Loess Hill RC&D and the NRCS Plant Materials Center in Manhattan, Kan. The Plant Materials Center has plans to do additional seeding in 2007.

Mark Janzen, plant materials specialist at the Plant Materials Center, said the idea behind a healing garden is that plants can bring healing and hope to a community.



Photos by: Joanna Pope, NRCS

**Bob Starck, volunteer with the AiKiRuti Healing Garden, shows plans of the Healing Garden to Constance Miller, NRCS State Forester.**

“These plants will help focus Tribal members back towards their cultural heritage and help them identify the significance that plants had in their cultural history,” Janzen said.

Members of the Winnebago Tribe have become enthusiastic about learning the role plants played in their cultural history. Local children volunteered to plant buffalo grass at the Healing Garden’s Tee Pee site. CeCe Earth, a member of the AiKiRuti organization said this provided an opportunity for Winnebago children to restore a piece of their Tribe’s culture.

“These kids rode their bikes to the garden to check on their grass. They were really excited to see how well it was growing. It is now one of the most sacred sites in the garden,” Earth said.

The AiKiRuti organization wants to build a Cultural Learning/Visitors Center. The center will provide a place of cultural discovery for members of the Winnebago Tribe, and provide an opportunity for non-Indians to participate in cultural and educational activities alongside members of the Tribe.

“It can take a long time for a garden like this to really start to look like something. But if you look closely you can see some beauty and hope emerging,” Earth said.

Hope is what has kept this project moving forward. AiKiRuti can also be interpreted as meaning “a hand reaching out to help”. Members of the Winnebago Tribe are hoping this Healing Garden will soon live up to its name. ♦



## Nebraska NRCS Announces Its 2006 Earth Team Award Winners

Nebraska NRCS employees took time this fall to express their appreciation to their exceptional Earth Team volunteers and colleagues by nominating them for an Earth Team award. The following are the recipients of the 2006 Nebraska Earth Team Awards. They will now move on to the national Earth Team award competition. Congratulations!

### **Nebraska Earth Team Group Award: Superior FFA Chapter**

The Superior FFA Chapter volunteered for the five NRCS field offices within the Little Blue NRD. The FFA Chapter recorded “conservation reports”, which aired on the local radio station. These conservation reports provided current NRCS program information to farmers and ranchers in southeast Nebraska.

### **Nebraska Earth Team Individual Award: Jan Thaden**

Jan Thaden volunteered at the Valentine NRCS field office after the Big Rock Fire, which burned over 3,000 acres of land and destroyed 10 homes in July. Jan created and distributed information regarding fire recovery resources available to landowners following the fire. She also developed a “Firewise” display for the Cherry County fair.

### **Earth Team Partnership Award: Northeast Nebraska RC&D Council**

The Northeast Nebraska RC&D Council demonstrated an exceptional use of volunteers. The Council used 186 volunteers who contributed over 6,800 hours to complete 15 projects.

### **Earth Team Volunteer Coordinator Award: Glen Einspahr**


Glen is the Soil Conservation Technician at the Neligh NRCS field office. He has also served as the Area Volunteer Coordinator for the northeast region of Nebraska for many years. He served in this collateral duty with a deep dedication and enthusiasm.


### **Earth Team NRCS Employee Award: Doug Gahn**

Doug Gahn is the Assistant State Conservationist for Operations at the NRCS state office in Lincoln. While working with NRCS employees across the state Doug is constantly encouraging them to recruit Earth Team volunteers.



## What's New On-line?

 USDA's "Energy Estimators" for Animal Housing and Irrigation Water Management are now available on line. The Irrigation Energy Estimator helps irrigators evaluate the amount of energy used by different irrigation systems. The Animal Housing Energy Estimator evaluates the energy use and costs associated with heating, lighting and ventilating poultry, swine and dairy housing. These energy estimator tools have been developed by USDA as part of its overall energy strategy to reduce the impacts of high energy costs and to help develop long-term solutions for producers. For more information, check out the USDA's Save ENERGY Save MONEY web site <http://energytools.sc.egov.usda.gov/>

 The Web Soil Survey Brochure is available on line in a downloadable PDF format for easy printing. This brochure provides step-by-step instructions for using the Web Soil Survey, and explains the tools available on the Web Soil Survey. To access this publication visit <http://soils.usda.gov/survey/WSS-Brochure.pdf>

# Interest in Wetland Restoration Grows Along the Missouri River

By: Pat McGrane, NRCS Public Affairs Specialist

Ron Palmer is one of 25 Burt County landowners who converted cropland and restored it to wetlands through the Wetlands Reserve Enhancement Program (WREP). In Burt County, nearly 3,000 acres have been restored to wetlands.

Palmer, who is farming land that has been in his family since 1915, said, "I grew up along the Missouri River. I want to restore the wildlife habitat and wetlands."

Palmer liked the program and the results so well he has applied to enroll another 80 acres into WREP.

The Lower Missouri River Wetlands Reserve Enhancement Program, which includes the

Palmer farm, targets a special area along the Missouri River roughly from Ponca to Rulo, Neb. Land in the Missouri River floodplain qualifies for this program, which offers increased management options such as "linking" neighboring wetlands. Land throughout the rest of the state may qualify for the Wetlands Reserve Program.

Interest in the WREP, and the statewide Wetlands Reserve Program, is expanding among Nebraska landowners. In 1997, there were 13 contracts written statewide, restoring 2,000 acres of cropland to wetlands. During 2006, NRCS enrolled 83 applications from landowners for approximately 11,000 acres. ♦



Photo by: Pat McGrane, NRCS

Ron Palmer restored his Burt County cropland bordering the Missouri River back into wetlands through the Wetlands Reserve Enhancement Program.

## Upcoming Events

**December 6 and 7**  
Panhandle No-Till Winter Conferences  
8 a.m. - 4:30 p.m.  
Gering Civic Center - Dec. 6  
Sidney Holiday Inn - Dec. 7  
*For more information contact Kathy Buttle at (308) 436-7194.*

**December 12 and 13**  
Bio-Diesel Basics - Grow Your Own Fuel  
10 a.m. - 4:15 p.m.  
Ord Fairgrounds Dec. 12  
Atkinson Community Center Dec. 13  
*Registration Fee: \$25, and \$30 after Dec. 6. Fee includes lunch and break. For more information call: Loup Basin RC&D at (308) 728-3393 or North Central RC&D at (402) 684-3346.*

**January 27**  
Middle School Science Bowl Competition  
Lincoln, Neb.

**February 3**  
High School Science Bowl Competition  
Lincoln, Neb.

*Volunteers are needed! For more information contact Arlis Plummer at (402) 437-4066 or visit [www.ne.nrcs.usda.gov/partnerships/Sci\\_Bowl/index.html](http://www.ne.nrcs.usda.gov/partnerships/Sci_Bowl/index.html)*

**February 13**  
Rainwater Basin Joint Venture Informational Seminar  
Holiday Inn Convention Center  
Hastings, Neb.

*For more information contact Steve Moran at (308) 382-8112.*





# NRCS Presents at Central Nebraska Environmental Festival

By: Bev Smedra, Ord District Secretary

The 13<sup>th</sup> annual Environmental Festival was held Oct. 13 at the Valley County Ag Complex in Ord, Neb. The theme for this year's event was "Becoming Weatherwise".

Approximately 200 fourth grade students, teachers and sponsors from nine area schools in Valley, Sherman, Greeley, Howard, Garfield and Wheeler counties had the opportunity to participate in six different learning sessions related to weather and the environment.

Linda Studnicka and Vicki Bauer of the Loup Basin RC&D demonstrated the effects of pollution and weather on plants in "Every Plant for Themselves"; Mark Sintek with the Ord NRCS office and Amanda Zarek with the Albion NRCS office with the assistance of Ginny John and the Bev Smedra of the Lower Loup NRD presented "Weather Wonders". This activity explained to the students how greenhouse gases affect the environment and weather, the effects of global warming, and how farmers are helping to store the greenhouse gas, carbon, in the soil using various conservation tillage farming practices.



**NRCS employees Amanda Zarek and Mark Sintek educate students about greenhouse gasses at the Central Nebraska Environmental Festival held in Ord.**

Members of the Ord FFA Chapter signed on as Earth-Team Volunteers to serve as group leaders and assist presenters for the day.

The annual Environmental Festival is sponsored by UNL Extension assisted by the Lower Loup NRD, U.S. Geological Survey, Natural Resources Conservation Service and the Loup Basin RC&D. ♦

## LANDCARE *Delivers!*

Looking for a NRCS brochure? Need to order a display? Have a question about the Earth Team? Then you need to contact LANDCARE.

The LANDCARE office keeps inventory and processes orders for NRCS publications, forms and displays for NRCS employees and the general public. Orders may be placed by calling 1-888-LANDCARE, or by visiting <http://landcare.nrcs.usda.gov/>

LANDCARE staff includes (L-R) Michele Eginore-National Earth Team Volunteer Coordinator, Alan Bengel-Program Assistant, Venessa Alvarado-Office Assistant, Bonnie Allely-Volunteer Liaison, John Gilman-Program Specialist.



# Photos From Afghanistan

Joe Fuchtman, NRCS Resource Conservationist in the Neligh field office, has been serving on a detail to Afghanistan since April. He is involved in agriculture reconstruction projects, like irrigation. In October he was traveling through remote villages providing veterinary assistance like deworming and vaccinating cattle, goats, sheep, donkeys, horses and chickens. Fuchtman said it was difficult work because he had to physically hold down the animals being vaccinated, but it was worth the effort because the people were so appreciative. Fuchtman will be finishing up his detail in January 2007 where he will return to work with NRCS in Neligh.

*(Below) One of the cows Joe helped to vaccinate. He said this is one of the more healthy looking cows in the area.*



*(Above) A common form of transportation due to the lack of infrastructure.*

*(Below) A girl brings her lamb to be vaccinated.*



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