

# Tri-Basin Topics

Summer 2010

*"Dedicated to Conservation of our Natural Resources"*

Volume 24, Issue 3

## Landowners and NRD use IPAs to Solve Local Problems

Tri-Basin NRD operates six Improvement Project Areas (IPAs) in Kearney and Phelps Counties. IPAs can be created for many purposes, ranging from flood control levees to public water supply systems. Our IPAs are all set up to maintain drainageways that channel rainwater and stabilize groundwater levels in portions of the district's High Groundwater Management Area (HGMA). They are named after the streams which are protected by them. They are: Fort Kearny, Fort Kearny-West, North Dry Creek, Sacramento Creek, South Dry Creek, and Whiskey Slough. We maintain a total of more than 25 miles of creek channels and drainage ditches in these six areas.

IPAs are great examples of grassroots political organization. Such projects enable landowners to pool their resources to insure that creeks and drainage ditches will be cleaned out to a consistent standard and maintained over time for the benefit of all landowners in a watershed.

IPAs are created when landowners petition a natural resources district, asking the district to take on what state law calls a "project of special benefit", which will be paid for by the beneficiaries. If the NRD board decides that a particular project will substantially benefit an area, they will authorize it. Then NRD staff work with landowners to determine how to assess "units of benefit", which are the basis for determining who pays how much for a project. We also conduct surveys and estimate the cost of work that needs to be done to achieve a project goal, such as digging ditches or cleaning silt out of a creek. The survey and design estimates form the basis of a cost estimate for a project. As part of the IPA creation process, landowners must then agree, by a majority vote of benefitted acres, to tax them-

selves to pay for these special projects.

After an IPA is approved by landowners, the NRD Board of Directors set the annual assessment rate. Assessments are a special form of property tax. Assessment rates are approved by the NRD board only after meeting with steering committees composed of landowners within the project areas. The level of assessments determine the pace of the work done in an IPA, so the NRD board and landowners try to set assessments high enough to make progress, but not so high that they create a tax burden that is greater than the benefits they provide. The NRD will sometimes lend money to an IPA so that a big job can be completed. An IPA then has five years to pay back a loan, with interest.

Tri-Basin NRD doesn't charge IPAs for staff time we spend working on projects or administering them. IPA landowners are required to pay for hiring outside contractors to do channel cleaning work. They also pay for herbicides, other chemicals and supplies used for channel maintenance work. Maintenance generally consists of spraying weeds and trees, trapping beavers and occasionally digging out silt accumulations. IPA steering committees advise the NRD board about priorities for maintenance and improvement in their project areas.

IPAs are managed primarily to improve drainage, but they also provide wildlife habitat. We maintain sediment-trapping grass buffer strips along most IPA channels. These clean-running streams provide homes for birds and mammals. We have seen everything from Great Blue Herons to River Otters living in IPA streams and along their banks.

Tri-Basin NRD has operated IPAs for over 25 years. Most landowners in IPA areas will tell you that the money they've paid in IPA assessments has been returned to them many times over in the form of productivity gains on their cropland. IPAs are good examples of local government working with citizens to provide cost-efficient solutions to local problems.





# Manager's Message

by John Thorburn

## The Rocky Mountain Locust

Grasshoppers can be pests when their populations boom. They can cause serious economic damage to grasslands, alfalfa, sometimes even row crops. For the most part, however, the 108 species of grasshoppers known to live in Nebraska are a minor nuisance, when they bother us at all. Grasshopper infestations are a rare occurrence today and we have insecticides available to control them. By contrast, grasshopper or "locust" swarms were frightening, ruinous, apocalyptic nightmares for Nebraska pioneers in the nineteenth century.

One particular species, the Rocky Mountain Locust (*Melanoplus spretus*), was notorious for its swarming behavior. A swarm of Rocky Mountain Locusts recorded on the Great Plains in 1875 is reputed to have covered 198,000 square miles, an area larger than the State of California. This swarm is recognized by the *Guinness Book of World Records* as "the greatest concentration of animals" ever known to occur on Earth. That swarm is estimated to have contained over 12 trillion grasshoppers!

Grasshopper swarms attacked Nebraska at least eight times between 1857 and 1875. The most notorious of these swarms was referred to as the "Great Grasshopper Raid" of July, 1874. This swarm appeared almost simultaneously all across the plains from the Dakotas south to Texas. They descended on the pioneers with the ferocity of an Old Testament plague. The swarm would fly during the hottest hours of the day, darkening the sky and filling the air with the menacing drone of millions of wings. They landed in the late afternoon to rest and eat.

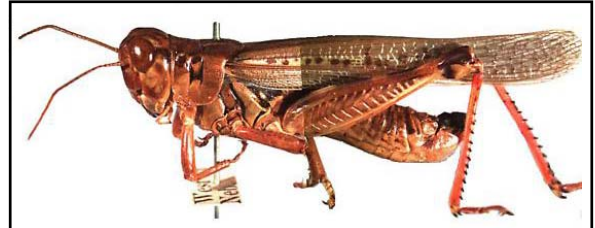


The locusts decimated everything in their path. It was said that they reduced entire cornfields to stubble in the course of a day. They ate not only the tops off potatoes and onions, they kept feeding down into the ground. They stripped bark off trees and ate clothes on clotheslines. They ate the wool off sheep. Cows' milk was tainted because they consumed so many of them as they grazed. Trains were halted because the rails were so greasy with grasshopper bodies that locomotives couldn't gain traction.

Farmers attempted to drive away or exterminate the grasshoppers with every means at their disposal. Many

inventions and poisons were tried, but smoky fires were the main weapon of resistance. Their efforts were doomed to failure in the face of the massive hordes. Chickens, turkeys and other birds feasted on them, but didn't seriously reduce their numbers.

After feeding for a day or two, female grasshoppers laid their eggs in the soil and died. Their bodies littered the ground. Each female was capable of laying 100 eggs. The pioneers dreaded the prospect of being assaulted by the next generation of 'hoppers that would emerge the following spring.



The 1874 grasshopper swarms drove many of the first wave of post-Civil War homesteaders off of their land claims by wiping out crops that were intended to sustain them through the following winter. The hardy souls who tried to stick it out depended on charity and emergency relief to avoid starvation. Many men left their families in search of work back east.

The new generation of locusts that emerged from the ground in spring of 1875 were troublesome, but not as disastrous as their ancestors had been. The young grasshoppers couldn't fly, so they were susceptible to being led into open ditches or straw windrows, where they were exterminated with fire. Many also seemed attracted to shallow pans of kerosene that were left out as traps in gardens. Farmers insured against another locust-induced crop failure by changing crops. The grasshoppers weren't picky eaters, but they avoided sorghum and broom corn. These became primary crops of plains pioneers in the 1870s and 1880s.

Rocky Mountain Locusts never swarmed again in great numbers after 1875. By the early 1900s they went entirely extinct. The last live specimen was captured in Alberta, Canada in 1902. In an odd twist of fate, the locusts which were once so abundant weren't often preserved for study, so specimens of them are now exceedingly rare. Fewer than 300 exist in museum and university collections.

Several theories attempt to explain the demise of America's only swarming locust species. Most scientists now think that the pioneers themselves inadvertently wiped out the locusts as they plowed up the fertile bottomlands of the Platte and other high plains river valleys that were the locusts' home range between swarming episodes.

I can't help but find poetic justice in the idea that the pioneers' strenuous efforts to settle and "civilize" the plains brought about the demise of the ravenous, primeval insects that tormented them. On the other hand, by wiping out swarming locusts, which were a prime food source for animals up and down the food chain, Man profoundly altered the plains ecosystem in ways that we still don't fully understand today.

# Water Use Hotline is Now Operating

The Water Use Hotline is in operation for the 2010 growing season. This hotline provides the public with crop water use data from local automated weather stations near Smithfield, Minden, Arapahoe, Lexington and north and south of Holdrege. Hotline numbers are (308) 995-2255 or 1-800-993-2507.

The 24-hour hotline offers the water use and growing degree days for corn, soybeans, grain sorghum, alfalfa and wheat. At this time, the hotline is only accessible to those individuals with touch-tone phones. Those with a rotary phone may call the Extension Office and a staff member will read the information.

When you call the hotline, you will get a recording advising you of the mailboxes available. If further information is needed about water use or other information from the Extension office, individuals are asked to leave a message after the tone.

Crop Water Use information is also available on the Central Nebraska Public Power and Irrigation District Website: [www.cnppid.com](http://www.cnppid.com). Click on NEWS & INFO, then click on WEATHER/ET DATA.

The Water Use Hotline is funded by UN-L Extension Office in Phelps/Gosper; Tri-Basin Natural Resources District and Central Nebraska Public Power & Irrigation District. For more information about the hotline, contact the Extension Office at (308) 995-4222.

## Water Samples Required for Nitrogen Management Reports

Producers with ground in Phase 2 or Phase 3 of the Groundwater Quality Management Area are reminded that water samples are required on all irrigation wells that are used. Even if a producer's agronomist takes soil samples and completes the Nitrogen Management forms, the owner or operator of the ground is responsible for taking water samples and reporting the results.

It is important to obtain water samples properly in order to get an accurate test result:

- Use a clean plastic container for your water sample. Water sample bottles are available at the Tri-Basin NRD office.
- Rinse the container several times with water that is being sampled. Send at least one cup of water to be tested.
- Wells should be pumped for several hours before sampling.
- If you can't bring the sample to Tri-Basin NRD or take it to the lab immediately after collection, it should be refrigerated until it is sent.

For more information on Groundwater Quality Management Phase 2 and Phase 3 Areas or on irrigation water sampling, call the Tri-Basin NRD office at 308-995-6688 or 1-877-995-6688.



Zach Starks, Kyle Dawson and Dallas Shoemaker are Tri-Basin NRD's summer interns.

## Tri-Basin NRD Hires Summer Interns

Tri-Basin NRD will have three summer interns assisting with various projects throughout the summer, including water sampling, weed spraying and IPA maintenance.

Zach Starks, from Haigler, Nebraska, has returned for a second summer as a TBNRD intern. He is studying criminal justice and wildlife biology at the University of Nebraska-Kearney. Zach enjoys sports, hunting and fishing.

Kyle Dawson is from Smithfield, Nebraska. He graduated from Bertrand High School and is interested in golf, music and sports.

Dallas Shoemaker is studying fisheries and wildlife at the University of Nebraska-Lincoln. His hobbies are hunting and fishing. Dallas is from Cortland, Nebraska.

The interns will help TBNRD staff with irrigation well sampling, chemigation inspections and summer maintenance projects. In addition, they will work part of the time with Central Nebraska Public Power and Irrigation District and NRCS on their irrigation projects.

"The students provide us with invaluable service, said Kevin Breece, NRCS District Conservationist from Holdrege. "They take care of many of the time taking tasks that must be done in our field offices."

## Electronic Version of Tri-Basin Topics is Available



If you would like to receive a PDF version of Tri-Basin Topics by email, send an email with your request to [nsalisbury@tribasinrd.org](mailto:nsalisbury@tribasinrd.org). We'll take you off the mailing list and send the newsletter to your inbox each quarter. If saving trees isn't enough incentive, consider this: the electronic version of the newsletter is full-color!

# CALENDAR OF EVENTS

(All meetings are at NRD office in Holdrege unless otherwise noted.)

## July

- July 5.....TBNRD Office closed for Independence Day
- July 13.....NRD Board Meeting at 1:30 p.m.\*
- July 17-22.....Kearney County Fair
- July 24-29.....Phelps County Fair
- July 28-31.....Gosper County Fair

## August

- August 10.....Board of Directors Tour  
NRD Board Meeting at 1:30 p.m.\*
- August 27-Sept. 6.....State Fair in Grand Island

## September

- September 6.....Labor Day (office closed)
- September 14.....NRD Board Meeting at 7:30 p.m.\*
- September 14-16.....Husker Harvest Days in Grand Island
- September 23.....Rainwater Basin Conservation Day  
for District 8th grade students

\* Times are tentative

## CONSERVATION TIP

Check the root zone of your lawn or garden for moisture using a spade or trowel before watering. If it's moist 2 inches under the soil surface, you still have enough water.



## TRI-BASIN NRD BOARD OF DIRECTORS

- Todd Garrelts, Chairman ..... Holdrege, NE
- David Nickel, Vice Chairman ..... Kearney, NE
- Ed Harris, Treasurer ..... Loomis, NE
- Larry Reynolds, Secretary ..... Lexington, NE
- Brian Bergstrom ..... Axtell, NE
- Dick Helms ..... Arapahoe, NE
- Phyllis Johnson ..... Bertrand, NE
- Joe Larson ..... Loomis, NE
- Brad Lundeen ..... Wilcox, NE
- David Nelson ..... Upland, NE
- David Raffety ..... Kearney, NE
- David Olsen ..... Minden, NE
- Ray Winz ..... Holdrege, NE

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## TRI-BASIN NRD STAFF

- John Thorburn ..... General Manager
- Richard Holloway ..... Assistant Manager
- Charles Brooks ..... Land Resources Coordinator
- Carie Lynch ..... Administrative Secretary
- Nolan Little ..... Water Resources Technician
- Alex Hasenauer ..... Land Resources Technician
- Tammy Fahrenbruch ..... Office Manager
- Esther Smith ..... Office Clerk
- Nicole Salisbury ..... Information & Education Coordinator
- Patty Abrahamson ..... Assistant Office Clerk
- Ruth Nielsen ..... Minden Office Secretary
- Lori Hagan ..... Elwood Office Secretary
- Tami Reese ..... Holdrege Office Secretary

A mailing list is maintained and requests to be placed on the list should be sent to the above address. Comments and suggestions may be addressed to the General Manager.

- ◆ TBNRD Summer Interns
- ◆ Irrigation Water Sampling Guidelines
- ◆ TBNRD Improvement Project Areas

## IN THIS ISSUE

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