

Middle Republican Natural
Resources District
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Calendar of Events

visit: www.mrnrd.org/calendar

May 31	Memorial Day--Office Closed
June 8*	Board Meeting
July 5	Office Closed
July 13	Board Meeting
August 10	Board Meeting
Sept 6	Office Closed
Sept 14	Board Meeting
Sept 15	Conservation CRAZE
Oct 11	Office Closed
Oct 12	Board Meeting

*Check online calendar or newspaper notices for meeting times and place and changes.

Reminder: Chemigation permit renewals due in District office by May 31st.

Board of Directors: Joseph Anderjaska, Hayes Center; Kevin Fornoff, Hayes Center; Josh Friesen, Wallace; Buck Haag, Bartley; Ben Loomis, Maywood; Rick McConville, Indianola; Dan Nelsen, Moorefield; Brad Randel, Indianola; Marty Schurr, Maywood; Rick Spencer, Culbertson; and James Uerling, Indianola.

MRNRD Office: General Manager, Daniel Smith; Assistant Manager, Robert Merrigan; Office Supervisor, Stacie Owens; Secretary / Receptionist, Mary Tidyman; Information & Education Coordinator, Roger Lawson; Technical Supervisor, Rich Karre; Technicians, Tom Hansen and Dennis Peterson

NRCS Field Office Clerks: Frontier County, Doris Burke; Hayes County, Kathy Barger; Hitchcock County, Carol Lashley; Lincoln County, Kathy Clark; Red Willow County, Betty Fritsch

Irrigators: If you've had a change in well ownership, please go to the DNR website at <http://www.dnr.state.ne.us> ground water, well registration information tab, and correct the information with their form or contact our office.

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Edited by Roger Lawson, Information and Education Coordinator, rlawson@mrnrd.org

SPRINKLES & SPLASHE S

SPRING 2010

THE QUARTERLY NEWSLETTER OF THE MIDDLE REPUBLICAN NATURAL RESOURCES DISTRICT

VOL. 20 NO. 2

From Dan's Desk

Spring is finally here and just as on your farm or ranch there is a flurry of activity at the NRD. We continue to refine the revisions to our Integrated Management Plan. A public hearing for this plan is scheduled for June 8, 2010 in Curtis. While this plan still includes the possibility of a shutdown of irrigated acres in the Rapid Response Area, there are provisions for augmentation leases or retirement of acres that will prevent that shutdown. The revisions to the plan were driven by the arbitration of last summer. The arbitrator, in

his findings, indicated that while Integrated Management Plans were in place, they were inadequate with regard to dry years. These new revisions have caused lots of concern. It is the districts intent to develop programs that maintain the opportunity to irrigate. If this IMP is adopted, we will begin the necessary changes in our rules and regulations to implement it.

The district has ongoing studies that will benefit our knowledge of hydrologically connected ground water and surface water. Our riparian project included the removal of trees along the banks of the Republican River and the installation of equipment to monitor the use of water by trees. A field tour and site demonstration is set up for May 26th beginning with a briefing in Cambridge. Our augmentation study continues with a review of selected sites and evaluation of the data necessary to determine the compact benefits this transfer of water. A water balance study is also ongoing. This study should give a better perspective of the overall water supply of the basin and aid in the management of that supply.

Continued on page two...

Needed Repairs Begin On District Flood Control Structure

Design flaws on two flood control structures owned by the District became apparent after heavy rains in 2007 and 2008. Both are scheduled for repairs as a result of structural flaws that occurred during their original construction. Structures 80A (north of Maywood) is currently undergoing repairs while 32A (Hitchcock and Hayes Co. line near Blackwood Creek) is scheduled to begin when 80A repairs are completed late this fall or early next year.

Small sink holes were observed in Structure 80A during the spring of 2007 and were determined by NRCS soil engineers to be the

result of dispersive soils and differential settlement. These soils are fine grained particles that erode below the surface, causing holes and gullies.

Structure 32A near Blackwood Creek experienced a sudden breach during an isolated and severe rain event in August of 2008. The breach began as a crack that probably started as a result of the erosion of underlying dispersive soils. This structure will be rebuilt using stimulus funds.

The NRCS soil engineers inspected both structures and developed repair plans that include remov-

Continued on page two...

Inside This Issue

- ◆ From Dan's Desk
- ◆ Repairs on Flood Control Structures
- ◆ Water budget Study
- ◆ Ground Water Levels Rise
- ◆ State Envirothon Competition Results
- ◆ Calendar of Events



The scraper shown above removes soil from the top of the structure and moves it to a storage location for later use.

...Continued from Dan's Desk

Chemigation inspections have begun and producers that have not returned their renewals are encouraged to find those forms and get them sent in with the payment. Renewals received after the first of June must be treated as new permits and the cost is higher.

Tree planting is complete and mulch should be installed on all planned sites by the time this newsletter is published.

Watershed dam inspection has begun and minor maintenance will be performed during the summer. This typically includes

removal of trees and shrubs, repair of eroded areas, and control of weeds and rodents. In a separate story in this newsletter we outline the major repairs to two of our structures. Additional investigation will be done this summer to evaluate our remaining structures with similar construction to make a determination of similar problems.

Watch our website for important events and meetings. We will post events, workshops and meeting as we become aware of them. ♦

Exploring New Tools for Better Understanding of Water Use

By Traci Witthuhn

Did you know that only 5-10% of Nebraska's water use can be traced to irrigation?

The Upper, Middle and Lower Republican NRDs recently began a "Water Budget Study" in the Republican Basin; this study is funded in part by the Nebraska Natural Resources Commission's Interrelated Water Management Plan Program Fund.

By definition, a "Water Budget" is a quantification of the inputs, outputs, storage changes and flows of water through a specified watershed. As with all budgets, the water budget should be balanced in an effort to most efficiently and sustainably use our natural resources. The study aims

at achieving a better understanding of water balance within the Republican Basin by identifying consumptive use sources (range-land, dryland acres, cropland acres), collecting historical and existing data to calculate the water budget, and relating that data to economic and environmental factors within the basin.

Water budgeting takes a new perspective in looking at water use; however, it is important to make sure that the inputs are as accurate as possible to ensure an accurate outcome – a relatively small error in input may compound itself into misleading outcome. The Republican Basin study will evaluate water budgets on both an NRD-wide and basin-wide scale.

Flood Control Structures

...Continued from page 1.

ing most of the existing fill, installing chimney filters and replacing the bulk of the earthen dam. Funding was requested from the USDA-NRCS and approved for the repair of 80A. Dirt work began in April of 2010.

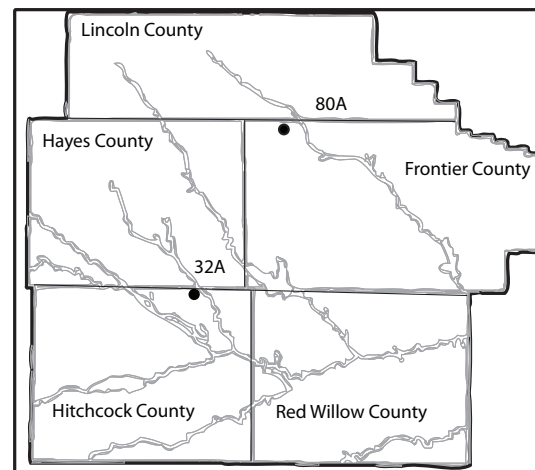
The District 'owns' 34 flood control structures throughout the District as part of the federal Watershed Protection and Flood Prevention Act.

The structures were built in the 50's and during the 70's through the early 90's. The two damaged structures were built in the 80s. The remaining 32 structures remain intact but the District is monitoring

those structures as well even though they performed admirably during the 2007 and 2008 Spring rains. ♦



A dump truck dumps soil taken from the flood control structure to a storage area.



The map to the right shows the waterways, district boundaries and locations of the two flood control structures that are under repair.

Structure 80A is just north of Maywood. Structure 32A is just west of Blackwood Creek.

This approach will provide even more local information to further assist in future development and revision of existing individualized management plans for each NRD, as well as looking at a big-picture approach in the basin.

Among stated objective in this

study is fostering a working relationship across state lines regarding land management practices. A similar study is being considered in Colorado's portion of the Republican Basin. ♦

Ground water Levels Continue to Rise in District

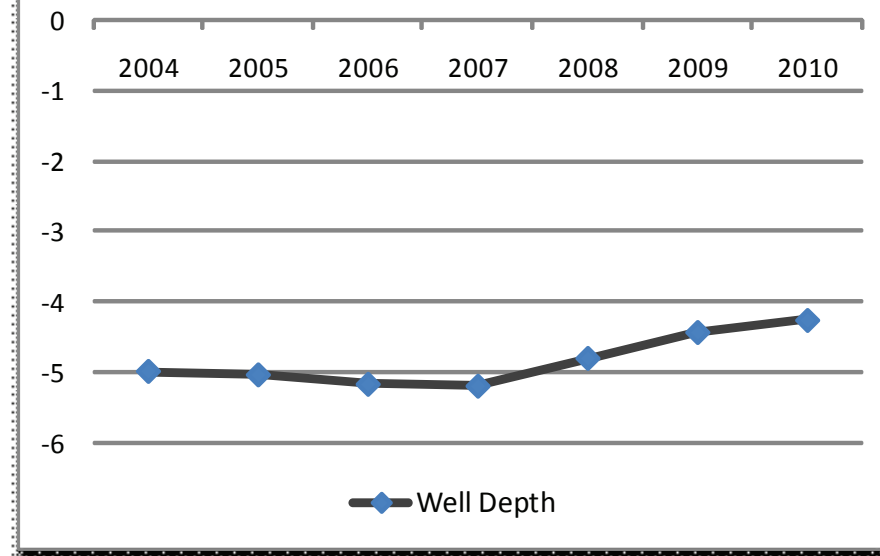
District ground water levels continue to show recovery from the Nebraska southwest area drought that ended in 2007. Middle Republican NRD technicians visited 122 observation wells between snow events and hard freezes this past March to measure ground water levels. On average the levels were 2.06” higher than this time last year.

Spring well measurements began a steady downward trend with a brief reprieve in 2000. In 2007, well depths finally decreased (rose) from a low point of -5.2 feet to -4.8 feet below static levels of 1976. The downward trend also slowed significantly in 2005 when

water levels dropped less than an inch. The downward trend and recent upturn closely shadows the drought years and recent wet springs experienced in our District. Ground water usage by irrigators has remained largely consistent with a gradual decline in pumping in the past five years.

Technicians try to measure all 128 observation wells (some are not accessible in some years) every March and October. In addition, a subset of 8 wells scattered throughout the District are measured monthly to provide a more detailed picture of ground water level fluctuations within a season.

Cummulative Change in Well Depth from 2004 to 2010



Measured in feet, this chart shows the cummulative changes in well depths across the District from 2004 to 2010.

STUDENTS COMPETE IN THE 2010 NEBRASKA STATE ENVIROTHON

by Alyssa Smola

The 2010 Nebraska Envirothon State Championship team hails from Superior High School. The competition was held May 1st at the Nebraska Nature and Visitor Center near Alda. Students from across the state participated in five-member teams, and competed against 14 other Nebraska High School teams. The State competition is one stop on the road to the Canon Envirothon which is a national program for 9th – 12th grade students who study long and hard to become proficient in a wide array of subjects relating to natural resources and the environment.

Five-member teams compete in seven areas of environmental studies: Soils, aquatics, forestry, wildlife, range, policy and a current environmental issue titled *Protection of ground water through urban, agricultural and environmental planning*. Test questions are not only written, but many require hands-on observations, measurements and calculations.

To advance to the state competition, student teams first compete in regional contests around the state. The winners of each region and seven wildcard teams then compete at the state competition.



From left to right: Dave Barnard (Coach & Advisor), Roger Nelson (NARD), Zach Dressman, Victoria Simonsen, Jim Johnson (NARD), Andrew Brittenham, Tyler Stobl, Chandler Mazour (Monsanto), Bethany Brittenham, and Alyssa Smola (NARD).

The State Runner-up team was also from Superior High School and a team from Ord High School finished in third place. Other High Schools participating at the state contest were: Bellevue East, Bellevue West, Omaha Burke, Norris (Firth), Ogallala, Concordia (Omaha), West Holt, Boone Central and Gering. ♦