



Nebraska Resources

Newsletter

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Agency Numbers to Remember

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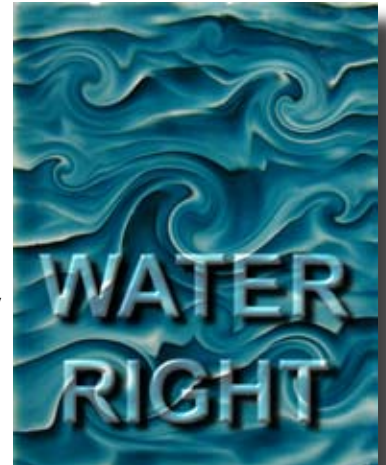
Cancelling a Surface Water Right for Nonuse

By Pam Andersen

In Nebraska, **all water appropriations must be for a beneficial or useful purpose.** When an appropriator fails to use the water for the beneficial use specified in the permit for **more than five years, the water right can be cancelled** by the Department. Water rights can only be lost after going through a cancellation procedure with full due process protections. Water rights are not lost by forfeiture or any automatic process in Nebraska.

A cancellation starts with an investigation by the local field office staff. If they determine that there was water available during the last five years and that there was not "sufficient cause" to not use the water, then the appropriator will be sent a "Notice of Preliminary Determination of Nonuse." State law dictates what is "sufficient cause" for not using a water appropriation for five years. **Section 46-229.04** describes the complete list of acceptable excuses for not using the water.

Continued on p.2



Flooding in 2008

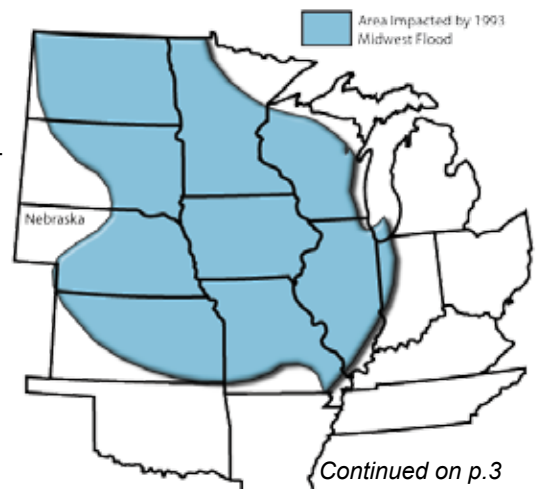
By Steve McMaster

The first clue that we might have an active flood season this year came when State Climatologist Al Dutcher predicted in March that we *"can expect to see exceptionally active weather across the central plains this spring."* Television meteorologists were also giving a three-month outlook which included below average temperatures with above average precipitation. These predictions have come true as many parts of Nebraska have been witness to flooding. But is the worst of it over for Nebraska?

Looking at the regional weather patterns, 2008 is progressing in a fashion eerily similar to the record flooding year of 1993. In that year, a blocking Bermuda high pressure system over the southeast United States backed up the jet stream, causing wave after wave of storms to move over the same



waterlogged portions of the Midwest. Every county in Iowa was declared a federal disaster area, as were 52 counties in Nebraska. Record flooding on the Mississippi and Missouri Rivers and countless tributaries forced evacuations



Cancelling a Surface Water Right for Nonuse continued from page 1

46-229.04.

(2) Sufficient cause for nonuse shall be deemed to exist for up to thirty consecutive years if such nonuse was caused by the unavailability of water for that use. For a river basin, sub-basin, or reach that has been designated as overappropriated pursuant to section 46-713 or determined by the department to be fully appropriated pursuant to section 46-714, the period of time within which sufficient cause for nonuse because of the unavailability of water may be deemed to exist may be extended beyond thirty years by the department upon petition therefor by the owner of the appropriation if the department determines that an integrated management plan being implemented in the river basin, subbasin, or reach involved is likely to result in restoration of a usable water supply for the appropriation.

(3) Sufficient cause for nonuse shall be deemed to exist indefinitely if such nonuse was the result of one or more of the following:

(a) For any tract of land under separate ownership, the available supply was used but on only part of the land under the appropriation because of an inadequate water supply;

(b) The appropriation is a storage appropriation and there was an inadequate water supply to provide the water for the storage appropriation or less than the full amount of the storage appropriation was needed to keep the reservoir full; or

(c) The appropriation is a storage-use appropriation and there was an inadequate water supply to provide the water for the appropriation or use of the storage water was unnecessary because of climatic conditions.

(4) Sufficient cause for nonuse shall be deemed to exist for up to fifteen consecutive years if such nonuse was a result of one or more of the following:

(a) Federal, state, or local laws, rules, or regulations temporarily prevented or restricted such use;

(b) Use of the water was unnecessary because of climatic conditions;

(c) Circumstances were such that a prudent person, following the principles of good husbandry, would not have been expected to use the water;

(d) The works, diversions, or other facilities essential to use the water were destroyed by a cause not within the control of the owner of the appropriation and good faith efforts to repair or replace the works, diversions, or facilities have been and are being made;

(e) The owner of the appropriation was in active involuntary service in the armed forces of the United States or was in active voluntary service during a time of crisis;

(f) Legal proceedings prevented or restricted use of the water; or

(g) The land subject to the appropriation is under an acreage reserve program or production quota or is otherwise withdrawn from use as required for participation in any federal or state program or such land previously was under such a program but currently is not under such a program and there have been not more than five consecutive years of nonuse on that land since that land was last under that program.

The Department may specify by rule and regulation other circumstances that shall be deemed to constitute sufficient cause for nonuse for up to fifteen years.

The water right is cancelled if the appropriator doesn't respond to the notice. However, the appropriator may disagree with the Department's preliminary determination and request a contested case hearing. The hearing resembles a trial but there is a hearing officer instead of a judge or magistrate and the rules of evidence are not followed strictly. If the appropriator cannot prove that he or she had sufficient cause

to not use the water, the water right is cancelled.

There is no increase in stream flow when a water right is cancelled for nonuse. This is because the water hadn't been diverted from the stream for at least five years prior to the cancellation. It is in effect "paper water" at that point. **The Department does not rely on "paper water" to determine if there is unappropriated water available for a new water use.** Instead, the historic flow method is used. The Department looks at stream gage data, observation and experience from water administration to decide if there is enough flowing water to issue a permit. The Department does not attempt to add up all of the water rights that have ever been issued

Water Right Cancellation Procedure

- Investigation by Field Office
- Preliminary Determination
- Notice of Preliminary Determination
- Response to Preliminary Determination
- Accept or Disagree
- Cancellation or Case Hearing
- Sufficient Cause(s) Accepted or Rejected
- Water Right Retained or Cancelled

and calculate how much "paper water" has been appropriated. It would be impossible to get an accurate picture of available stream flow by adding up all of the permits in a basin. Every year, the amount of water diverted from the stream changes because farmers change crops and each crop has different water needs or a farmer may put his or her land in EQIP or CREP and not irrigate at all for several years. The prior appropriation system is dynamic and rewards the senior irrigators who developed their fields first. Junior irrigators are entitled to take whatever is left.

The fact that an appropriator is not using his or her water right and it hasn't been cancelled yet does not affect whether or not a basin is determined to be fully appropriated. The only appropriations considered are those actually being used. A basin is fully appropriated if a senior appropriator requests junior appropriators that are diverting water to be closed so often that the junior appropriators cannot divert at least 65% of the water needed during the peak irrigation season or 85% during the entire season. **An unused paper water right does not factor into the calculations at all.**

Flooding in 2008 continued from page 1

of entire towns with daily news accounts of which levees were “popping” in the flood ravaged areas. Fast forward 15 years and you see the same things: record heat and dryness in the Southeast, cool weather on the West Coast, wave after wave of storms cascading across the Central Plains, and more daily levee watches.

The only difference this time is that the area of worst flooding is more focused and a bit farther east. This time, there is again severe flooding on the Mississippi and Missouri Rivers, but more large communities are experiencing major flood damage – like Cedar Rapids, Cedar Falls and Iowa City, Iowa.

In 2007, Nebraska had three federal disaster declarations from flooding, and an exceptionally wet autumn led to high antecedent soil moisture levels. With a late winter thaw and early onset of significant rain events this year, the ground has never had time to dry out. Surprisingly large and consistent single-storm rainfall amounts have exacerbated the problem, with many areas seeing regular two- or three-inch rains. As a result, the rivers and streams in these parts of Nebraska have not been able to contain the runoff. **Nebraska has had two flood-related federal disasters declared in 2008...so far.**

Around the State, here are some of the flood highlights for 2008.

- On Memorial Day weekend Lexington and other parts of Dawson County were cleaning up after flood damage when some areas saw up to eight inches of rain in five days.
- The Platte River at Ashland crested May 31 at 21.13 feet, the fourth highest crest on record at that location.
- The Missouri River at Nebraska City crested on June 1 at 21.15 feet, the 12th highest crest on record.
- Elm Creek flooded and forced evacuations in Platte Center – residents there said the water came up so quickly that they didn't have time to grab possessions, but that the flooding was not as bad as 1990.
- Downstream, major flooding on Shell Creek inundated over 200 homes in Schuyler and forced additional evacuations. A crest of 22.06 feet from the Columbus gage at Shell Creek puts the flood as the fourth highest crest on record and the 10,380 cubic feet per second discharge at the gage may be a record.
- About 15 people in the Nehawka area of Cass County were evacuated because of flooding from Weeping Water Creek.
- Battle Creek residents were sandbagging again after a major flood hit that community last year.
- Residents in Lynch were without potable water after flooding ruptured the town's water line.
- Significant flooding was reported in the Seward area and in southern Lancaster County.

In 1993, the summer flooding did not reach its peak until mid-July. In 2008, some meteorological outlooks indicate that this wet weather pattern will not change until mid-July. So even though many communities in Nebraska are licking their collective wounds from a round of flooding, we may not have seen the end of it for the year. **This points to the benefits of having a sound local floodplain management program and approved hazard mitigation plan.**

For more on the Great Midwest Flood of 1993 and other flood news, visit the Floodplain Management page on NDNR's website. The page is updated with new and interesting information on a regular basis, so visit frequently!

<http://www.dnr.ne.gov/floodplain/floodplain.html>

For additional information on up-to-date precipitation across Nebraska visit the NeRain page on NDNR's website.

<http://dnrdata.dnr.ne.gov/NeRAIN/>

Statutory Changes Effective July 19, 2008



Several changes to Nebraska water laws take effect July 19, 2008. The time limit to request a contested case hearing after a final decision of the Department was changed from 15 to 30 days. The laws regarding reuse pits in ephemeral streams (sections 46-283 through 46-287) were changed to allow the Department to specify by regulation which streams have been incorrectly identified as intermittent on the USGS topographical maps. When a stream is considered ephemeral by the Department it is not necessary to get a surface water appropriation before constructing a small reuse pit in the stream itself.

Section 46-290 was changed to allow the Department to grant an expedited transfer of a surface water appropriation even if the point of diversion is being changed as long as the new point of diversion is on the same stream, tributary, river or creek; the point of diversion does not move above or below another diversion point owned by another appropriator; and the proposed point is not above or below a tributary stream, a constructed river return or a constructed drain.

LB 798 also modified the intentional underground water storage laws to allow projects existing on or before August 26, 1983, to levy fees or assessments against persons who withdraw water intentionally stored.



Geothermal resources vs. heat pumps what's the difference?

By Tracy Zayac

Earth's internal temperature increases from surface to core. The rate of this increase is called the geothermal gradient, and that rate is generally predictable on a regional scale. Some geologic formations, though, occur at higher temperatures than the normal geothermal gradient would predict, as a result of a combination of pressure, heat conduction from underlying formations, and other local or regional factors. These formations, including the ground water they may contain, can be utilized as geothermal resources of energy.

In Nebraska, geothermal occurrences have principally been mapped across the western and central two-thirds of the state (see figure at right), at depths of about 1 km (0.62 mi) and temperatures ranging from 30° to 80° C (86° to 176° F). Direct use of naturally occurring, higher-temperature ground water in these areas for heat energy would likely be most successful. In order to utilize these resources, however, **a project would need to follow the permitting and planning guidelines found in Sections 66-1101 through 66-1106 of state statute and Title 456 Chapter 5 of the Department's Rules for Ground Water. A permit to develop a ground water geothermal resource must be obtained before any wells are drilled for the project.**

Ground water heat pumps, which are often used to heat residential and commercial buildings, also use the natural heating properties of formation water as an energy source for heating and cooling. The ground water used

for these installations, however, occurs at much shallower depths and lower temperatures, averaging 11° C (52° F) across most of eastern Nebraska. Neither state nor federal authorities consider heat pumps utilizing ground water at such lower temperatures to be geothermal resources, because the ground water occurs at the normal temperature gradient for this region. Consequently, a geothermal resources permit, as described in Section 66-1105 of state statute, **is not required for heat pump installation.** The series of water wells constructed as part of a heat pump system **are required to be registered** with the Department, as specified in Section 46-602 of the state statutes.



Approximate extent of geothermal resources in Nebraska
(adapted from Gosnold and Eversoll, 1982, Geothermal Resources of Nebraska, University of Nebraska Conservation and Survey Division and U.S. Department of Energy).

New Rules Become Effective



Current rules and regulations can be found on the Department's website at www.dnr.ne.gov/rules/rules.html.

On June 27, 2008, Governor Heineman signed into effect several modifications, repeals and additions to the Department's rules. Current rules can be found on the Department's website at www.dnr.ne.gov/rules/rules.html.

The major change was to adopt rules for the **Safety of Dams and Reservoirs Act (Title 458)**. These rules set new fees and describe processes for applying for construction permits for new dams, applying for construction permits to modify existing dams, and for submitting plans for existing non-permitted dams.

Other modifications to rules include:

- Title 457** - Chapters 8,12,13 and 19 Repealed (Surface Water)
Chapter 11 Modified (Surface Water)
- Title 455** - Repealed (Flood Plain Rules)
- Title 258** - Repealed (Minimum Standards for Floodplain Management Program)
- Title 455** - Adopted (Minimum Standards for Floodplain Management Program)

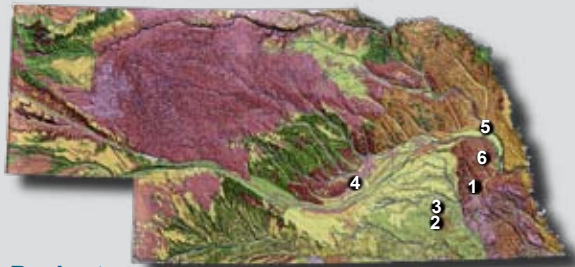
Nebraska Resources Development Fund Fiscal Year 2008 Funds Obligated

By Kent Zimmerman

At its May commission meeting, the Nebraska Natural Resources Commission **obligated \$3,373,154.12 to six projects for the fiscal year beginning on July 1, 2008.** These additional NRDF funds were committed to provide continued development for the following projects:

1) The **Antelope Creek Project**, sponsored by Lower Platte South NRD, received **\$416,057**. This project will remove about 400 acres from the regulated 100 year floodplain and the corresponding development restrictions within the City of Lincoln. Although the project was primarily designed and funded by the Corps of Engineers, NRDF is helping with the federally required local revenue match.

2) The **Little Sandy Creek Project**, sponsored by Little Blue NRD, received **\$324,597**. This project provides flood control to Sand Creek and the Little Blue River Watershed; and recreation to the Tobias-Daykin-Bruning area via construction of five dams.



3) The **Lower Turkey Creek Project**, sponsored by Lower Big Blue NRD, received **\$840,544**. This project's primary purpose, flood control, will be obtained through construction of seven flood control structures located in Saline and Fillmore Counties.

4) The **Upper Prairie/Silver/Moores Creek Project**, sponsored by Central Platte NRD, received **\$1,373,197**. This flood control project at Grand Island will temporarily detain water in upstream flood control structures and detention cells on Silver Creek.

5) The **Winslow Levee Project**, sponsored by the Village of Winslow and Lower Elkhorn NRD, received **\$18,759.12**. This project's primary purpose is flood protection to the Village of Winslow. Levee construction on three sides of Winslow is complete and this is the final obligation before project close-out.

6) The **Sand Creek Environmental Restoration - Lake Wanahoo Project**, sponsored by Lower Platte North NRD, received its first obligation of **\$400,000**. This project, also designed and primarily funded by the Corps of Engineers will provide flood protection and recreation to the town of Wahoo.

FY 08-09 obligation requests exceeded available funding by over \$6 million. Currently, the Legislature has set an \$18.5 million cap on the commission's funding authority to commit future appropriations to new and existing projects.

Interrelated Water Management Plan Program Fund

By Kent Zimmerman

The **Interrelated Water Management Plan Program Fund (IWMPPF)** has entered its third season of **helping to offset NRD costs** incurred under implementation of duties required to be performed by the Nebraska Ground Water Management and Protection Act. **To date, the Legislature has appropriated \$7.5 million to this fund.** These grants require a 20% local revenue match by the project sponsors.

Effective July 1, 2008, the Nebraska Natural Resources Commission awarded continued funding for the third year for nine projects; a second year of funding for three projects; and funded the first year of a new study. Nine additional requests totaling \$1,294,258 were not funded due to budget constraints. **The enabling legislation for the IWMPPF included a sunset clause for this fiscal year. As such, without action from the Legislature during the next legislative session, this fund will expire.**

Additional details on the IWMPPF can be found at :
http://dnr.ne.gov/IWMPPF/Funding-Summary_IWMPPF_2008.pdf.

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Dave Heineman, Governor

Nebraska

Department of Natural Resources

Brian P. Dunnigan P.E., Acting Director

The *Nebraska Resources* is a quarterly publication of the Nebraska Department of Natural Resources and is edited by Terry L. Cartwright, Public Information. Your comments and or suggestions are welcomed.

DNR is presenting a series of workshops developed for groundwater modeling and technical groups. Times and locations can be found at <http://dnr.ne.gov/docs/currentmeetingschedule.html> or you can contact Doug Hallum at 402-471-1114 or dhallum@dnr.ne.gov.

Thursday, July 31, 2008

Topic: Platte River Conjunctive Management Study
Presented by: Duane Woodward, Central Platte NRD
Time: 3:00 to 4:00 pm
Location: Central Platte NRD Conference Room
215 North Kaufman Avenue, Grand Island, NE

Thursday, August 28, 2008

Topic: Streambed Conductance - Implications for Calculating Baseflow Depletions
Presented by: Xun-Hong Chen, University of Nebraska-Lincoln School of Natural Resources
Time: 3:00 to 4:00 pm
Location: University of Nebraska, Lincoln - East Campus Hardin Hall, Room 901

Thursday, September 25, 2008

Topic: NPPD Groundwater Modeling - Gerald Gentleman Station and Sutherland Reservoir
Presented by: Clint Carney, NPPD
Time: 3:00 to 4:00 pm
Location: State Office Bldg., Lower Level Conference Room F
301 Centennial Mall South, Lincoln, NE

Workshops Continue

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Nebraska Department of Natural Resources....

....dedicated to the sustainable use and proper management of the State's natural resources.