

Nebraska's Natural Resources Districts
Making the Good Life Better Since 1972



BLUE RIVER BASIN

Blue River Basin Water Quality & Quantity FACTS

Groundwater irrigated acres: 2.2 million

Free water tests (2015):

Nitrate tests: 1,285

Bacteria tests: 314

Wellhead Protection Areas established:

81 communities

*The Blue River Basin is the
"Watershed Capital of Nebraska"...*

Flood control dams built (1972-2015):

201 structures

Recreation areas: 22 sites = 3,526 acres
of water and land managed

Forestry (2015): 55,248 trees sold

Protecting Lives



Little Blue River Basin Water Management Plan Being Developed

The Little Blue River Basin Water Management Plan is a comprehensive water management plan that will guide decisions to support a healthier watershed, support sustainability of water supplies, and to improve water quality.

The Basin includes 1,722,200 acres of land and spans ten counties and includes the Little Blue River and four primary tributaries. This is the largest basin plan in the state, including an entire basin. The goals of the Little Blue River Basin Water Management Plan are to:

- 1). Inventory and consolidate water resources data into a master document.
- 2). Identify resources concerns;
- 3). Review alternatives to address concerns;
- 4). Develop a comprehensive strategy for resources protection and management;
- 5). Position the District for supplemental funding opportunities.

Protecting Property

Groundwater Management Saves Our Most Precious Resource

The first Groundwater Management Area for Quantity was established in 1977 in order to preserve and maintain groundwater levels. As a result, groundwater rules and regulations were first adopted in 1979. Groundwater Management Areas for Quality were put into place across the Blue River Basin in 1993.



Groundwater Management Areas for both Quantity and Quality provide for water metering, allocation, domestic well monitoring, and nitrate and bacteria testing.

These controls protect and preserve our valuable groundwater resources, while at the same time ensuring the economic security of irrigated agriculture.

Protecting the Future

Wellhead Protection Assures Safe Drinking Water

Blue River Basin NRDs are working diligently with communities to develop plans and actions to protect municipal water supplies. This includes educating community members about potential pollution sources, enacting local ordinances, closing abandoned wells, and working with other local and state agencies on Wellhead Protection Area lands in and around cities and villages.

The Blue River Basin NRDs have helped over 80 communities establish Wellhead Protection Area plans across 7,000 square miles.



These communities account for over half of the protection plans for the entire state of Nebraska.

BLUE RIVER BASIN GROUNDWATER MODELING PROJECTS

Where is the Connection Between Surface Water and Groundwater...?

If you ever built a model airplane, ship, or car from one of those department store-bought plastic kits, you know that upon closer examination that not every rivet, bolt or nut is molded within the overall body panels, fuselage, or hull. However, the general shape, dimension, scale, and proportion in comparison to the real thing are nonetheless fairly accurate even at 1/72 the scale of the genuine article.



A groundwater model is much the same as it can give the model builder a fair representation of groundwater's and surface water's inter-relationship with one another. Not every single piece of rock, stone, sand, or gravel...nook or cranny, is plotted in the model, however the aquifer picture is accurate enough to represent certain geological conditions of such material, and subsequently how water passes through it. The Upper Big Blue NRD has been using a sophisticated computer-based model for running simulations of the Blue River Basin.

The Nebraska Department of Natural Resources is required by law to conduct an annual review of river basins to see if they are Fully Appropriated. First, the Department studies the last 20-years of record to see if the most junior (newest) surface water right received 85% of the water needed for crop irrigation. If not, the Department declares the river basin "Fully Appropriated." The Department then sets the management area boundary where groundwater is hydrologically connected to the river, also referred to as "10/50 lines."

When a river basin is declared fully appropriated, the Nebraska Department of Natural Resources (not the NRD) issues an immediate stay on the issuance of new surface water permits; plus a moratorium on well drilling, and no adding of new irrigated acres within that part of the basin that is hydrologically connected to the river. The Department, who is responsible for overseeing surface water, and the NRD who manages the groundwater, will then work together to write and implement an Integrated Management Plan to govern the use of both surface and groundwater in relation to each other.

Over the past several years, the Upper Big Blue Natural Resources District has been engaged in three groundwater modeling studies to examine hydrologically connected areas where groundwater pumping could affect surface water flows. The mission of all of Nebraska's NRDs is to protect and preserve the state's natural resources and to ensure that generations will have access to these resources into the future.



Dr. Xunhong Chen (left) and Dr. Mark Burbach, both of the University of Nebraska-Lincoln, conducted streambed conductance tests on the West Fork-Big Blue River. The drilling and testing was to find out how fast water moves vertically through the streambeds.



Nebraska's NRDs

- Protect lives through flood protection
- Are leaders in groundwater management
- Use taxpayer dollars efficiently

Find out more about the Blue River Basin NRDs:

Little Blue NRD
www.littlebluenrd.org
(402) 364-2145

Lower Big Blue NRD
www.lbbnrd.net
(402) 228-3402

Upper Big Blue NRD
www.upperbigblue.org
(402) 362-6601

Formed in 1972, Nebraska's Natural Resources Districts are local government entities with broad responsibilities to protect our natural resources.

NRDs help Nebraskans respond to natural resource challenges with local control and local solutions. Major Nebraska river basins form the boundaries of the 23 NRDs, each of which is governed by locally elected boards of directors. These directors are elected by registered voters within the Districts. The boards set policy for the Districts and work closely with NRD staff through a committee system to carry out the Districts' goals.

Statewide, NRDs are largely funded by property taxes and make efficient use of those tax dollars; typically a Natural Resources District uses only 1% to 2% percent of all property taxes collected in a county.

Find out more about all of Nebraska's 23 NRDs at www.nrdnet.org