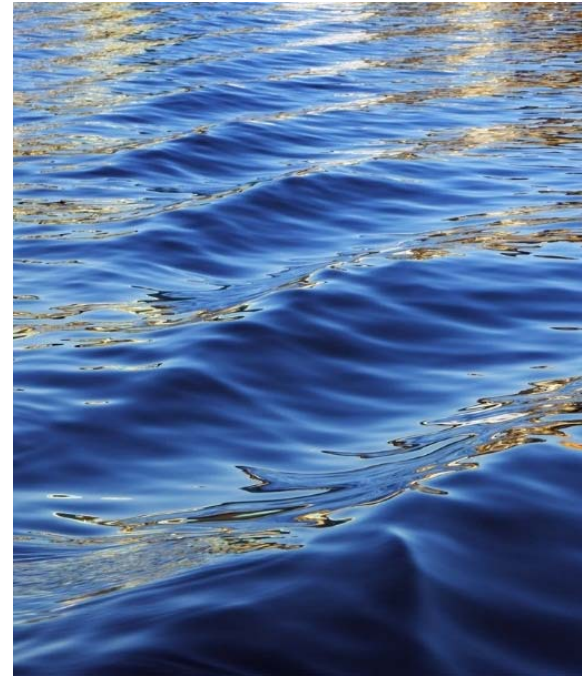
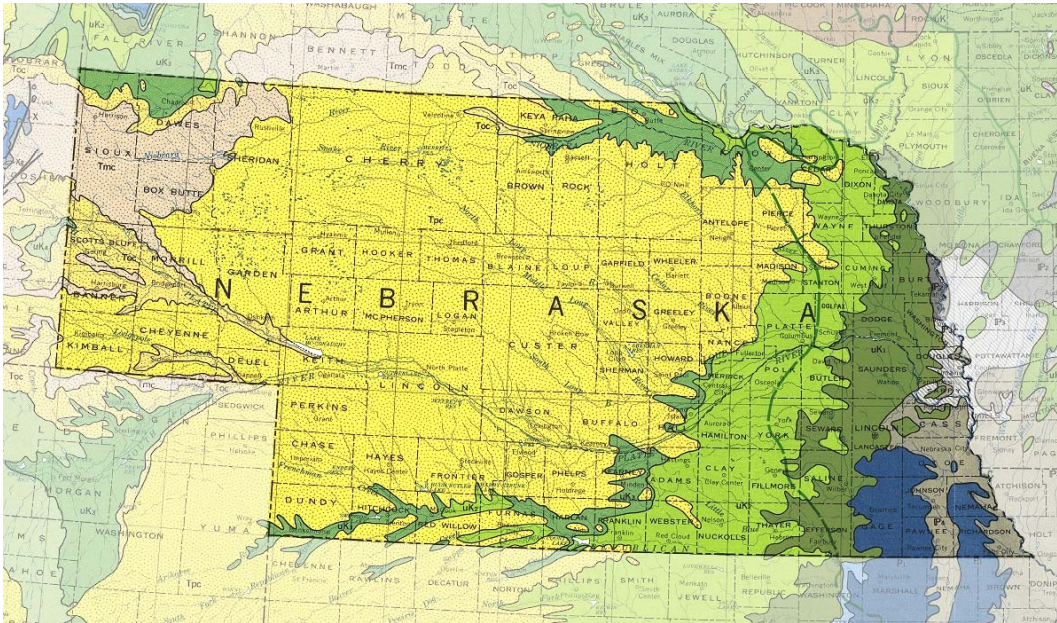


Source Water Protection in NE: Utilizing SRF Set-Asides

Tatiana Davila

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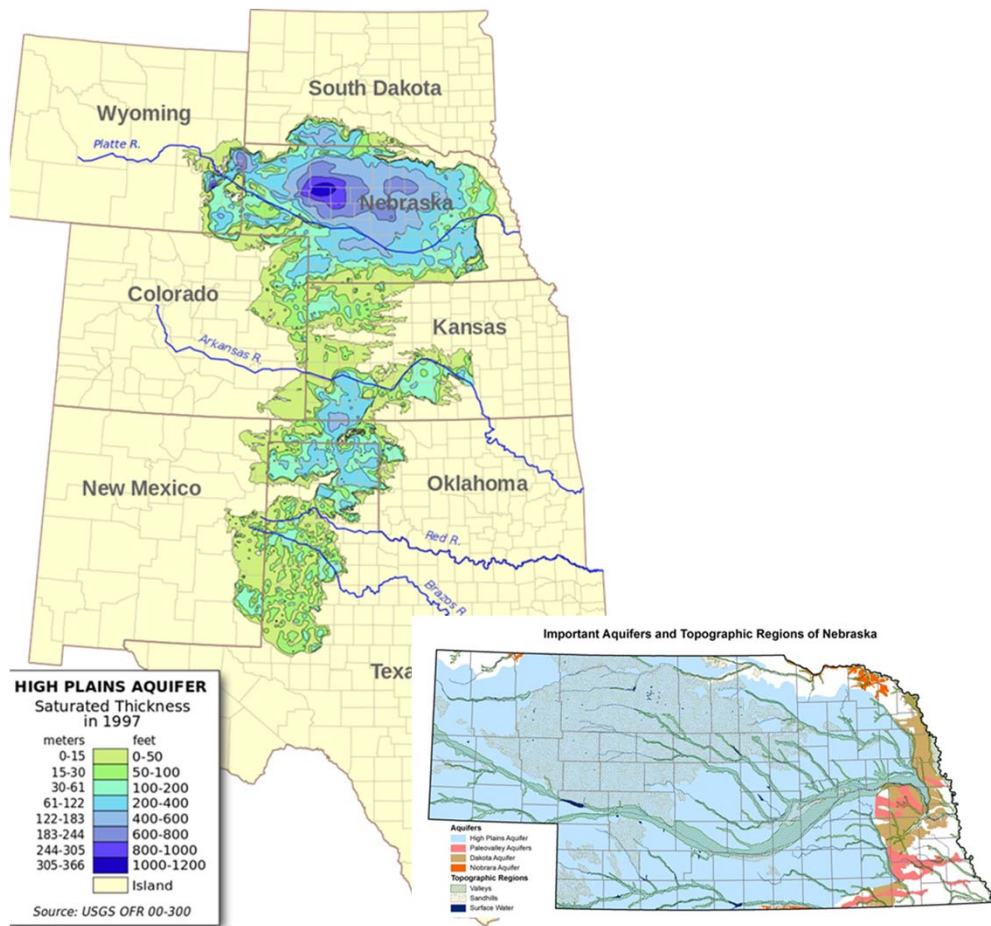




University of Nebraska Conservation and Survey Division

Agenda

- Nebraska water source context
- 2% & 10% Set-Aside Use
- 15% Set-Aside Uses
- Future Projects and Collaborations

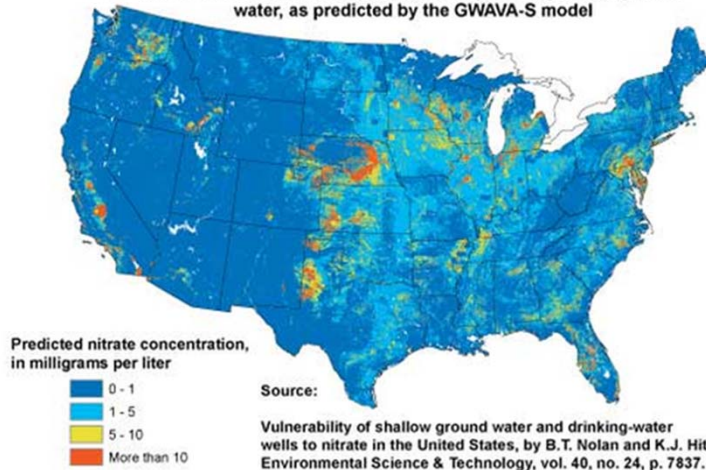


Nebraskans Drink Groundwater

- Over 88% of the state drinks groundwater
- Virtually all rural and domestic wells

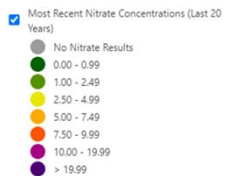


Nitrate concentration in shallow, recently recharged U.S. ground water, as predicted by the GWAQA-S model



Protecting Nebraska's Water

- Nitrate the most prevalent contaminant in Nebraska drinking water
- Agricultural use of commercial fertilizers in densely populated areas have had the greatest impact on groundwater quality



Clearinghouse.Nebraska.gov

TWO PERCENT SET-ASIDE

- Coordination of Technical Assistance providers
- Contracts with
 - NE American Water Works Association
 - University of Nebraska (Extension)
 - NE Rural Water Association
 - various engineering consultants
- \$100,000 Lead Service Line Identification Contract



TEN PERCENT SET-ASIDE

Administer the Drinking Water and Groundwater Division

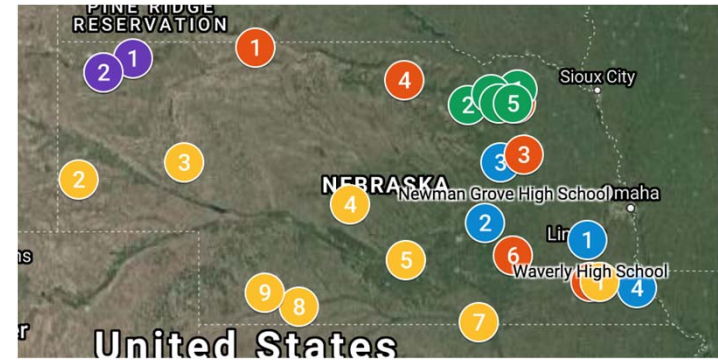
- Permitting, plan review
- Sanitary surveys
- Enforcement
- Implement WHP Program



FIFTEEN PERCENT SET-ASIDE | Current

- Citizen Science (Know Your Well)
- Groundwater Evaluation Toolbox
- Source Water Protection Grant Program
- Land acquisitions for SWP





Photos courtesy of Nebraska Water Center Know Your Well Project

Know Your Well


- High school students learn about groundwater basics, well construction, and how to test wells for drinking water quality
- Samples sent to UNL lab for comparison
- Data to inform researchers about NE drinking water quality

Groundwater Evaluation Toolbox (GET)

Models | CENEb - dry

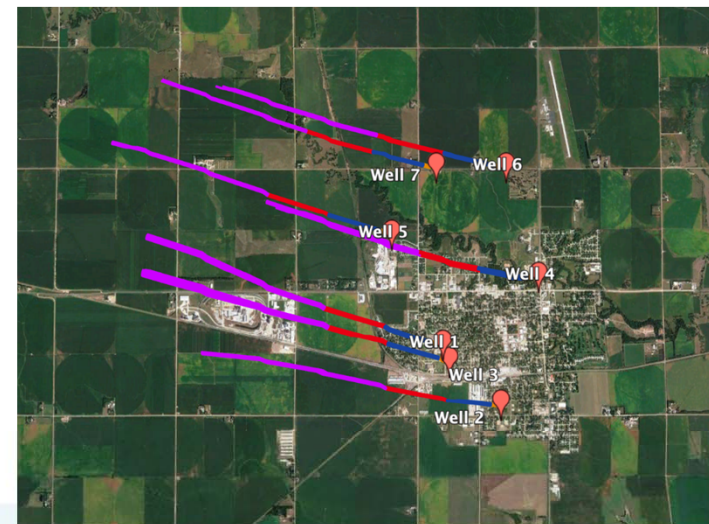
Description
This model uses 07/2001 heads and cell-by-cell flows from Central Nebraska groundwater model, to represent dry conditions.

Model Type
Steady State



Actions

Action Name	Status	Scenario	Created Date	Created By
Plainview.Dry	Complete	Particle_Trace	8/30/2021	Tatiana Davila



DRAWDOWN
See a change in water level from the beginning of a run.

STREAM DEPLETIONS
Quantify surface water / groundwater interaction.

WATER BUDGETS
Quantify flow into and out of the site by water cycle.

WELL INTERFERENCE
Quantify the change in water level in one well, caused by one or more neighboring wells.

WELLHEAD PROTECTION
Delineate wellhead protection area based on particle path lines from one or more points.

RECHARGE
Quantify aquifer response to changes in groundwater recharge.



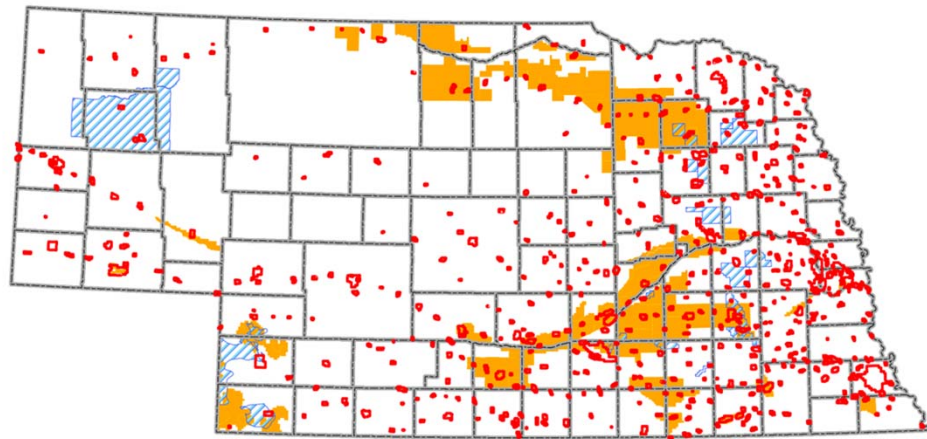
Source Water Protection Grant Program

~150-200k annually

~ political subdivisions that operate a PWS serving <10,000

~ financial hardship

Projects include hydrogeological assessments, plan development, well abandonment, cost shares for implementing agricultural BMPs...



- Legend**
- Wellhead Protection Areas (High Priority)
 - ▨ NRD GMA - Quantity Mgmt Areas (Medium Priority)
 - NRD GMA - Phase II or higher (Medium Priority)
 - County Boundary

Nebraska
 Natural Resources Conservation Service

ne.nrcs.usda.gov/



USDA is an equal opportunity provider, employer, and lender.

February • 2020

Land acquisitions for Source Water Protection

Syracuse

- 160 acres
- Part of well field master plan
- Two additional deep wells (deeper aquifer) in the future

Beatrice

- Parcel adjacent to low nitrate field
- 172 acres
- 1.3M

Drinking Water Protection
Management Plans

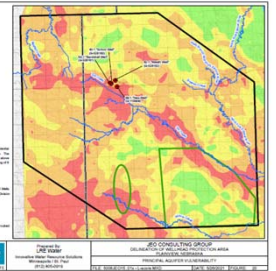
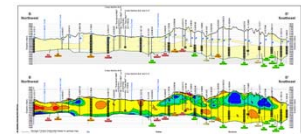
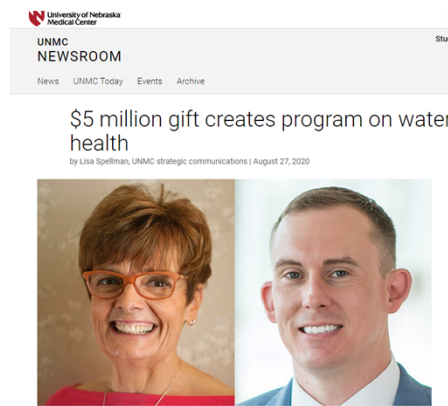
FIFTEEN PERCENT SET-ASIDE | Future

Continued...

- Source Water Protection Program
- Groundwater Evaluation Toolbox
 - Connecting with SIDWIS data
- Know Your Well Project

Future...

- SWP Extension Position with University
- Education Campaign Collaboration
 - Curriculum Development for k-12 around water, people, soil
 - Community Events
 - Communication Platform (UNL)





Thank you

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