
Update: Nebraska's Integrated Water Management Planning

Greater Platte River Basins Symposium

October 7, 2010

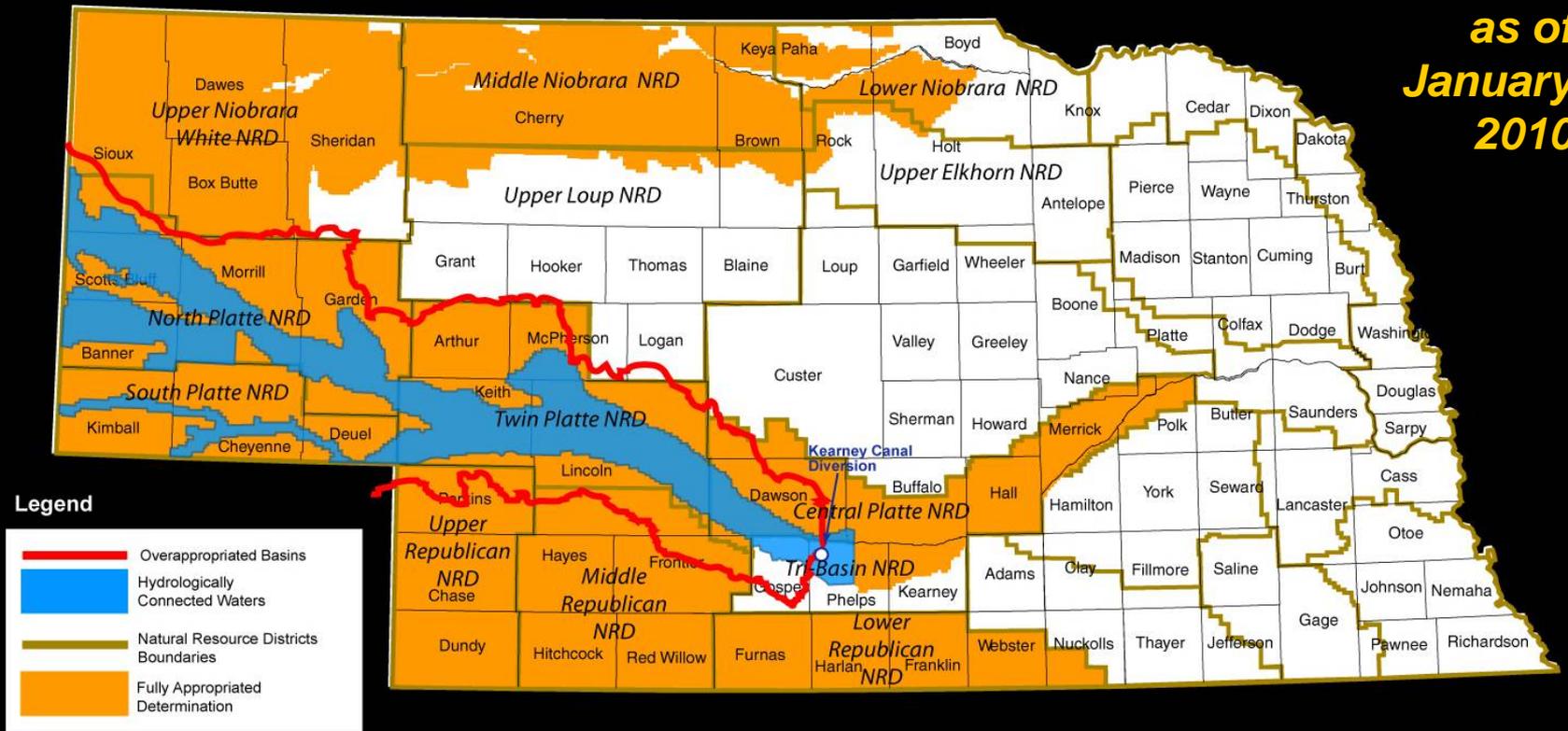
James C. Schneider, PhD, Deputy Director

Nebraska Department of Natural Resources

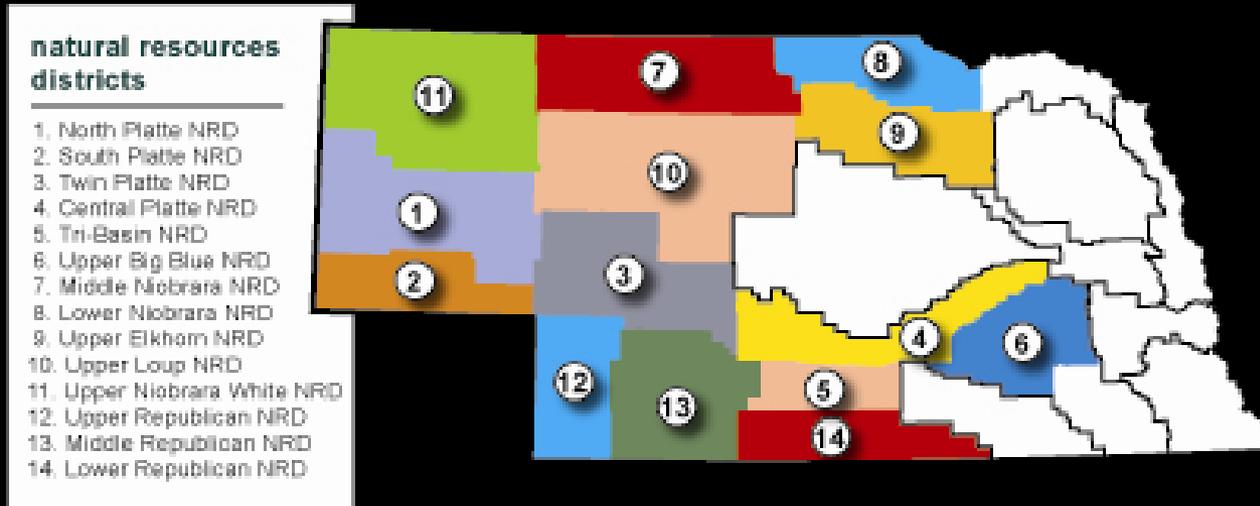


Fully and Overappropriated Areas

as of
January
2010



Status of IMPs



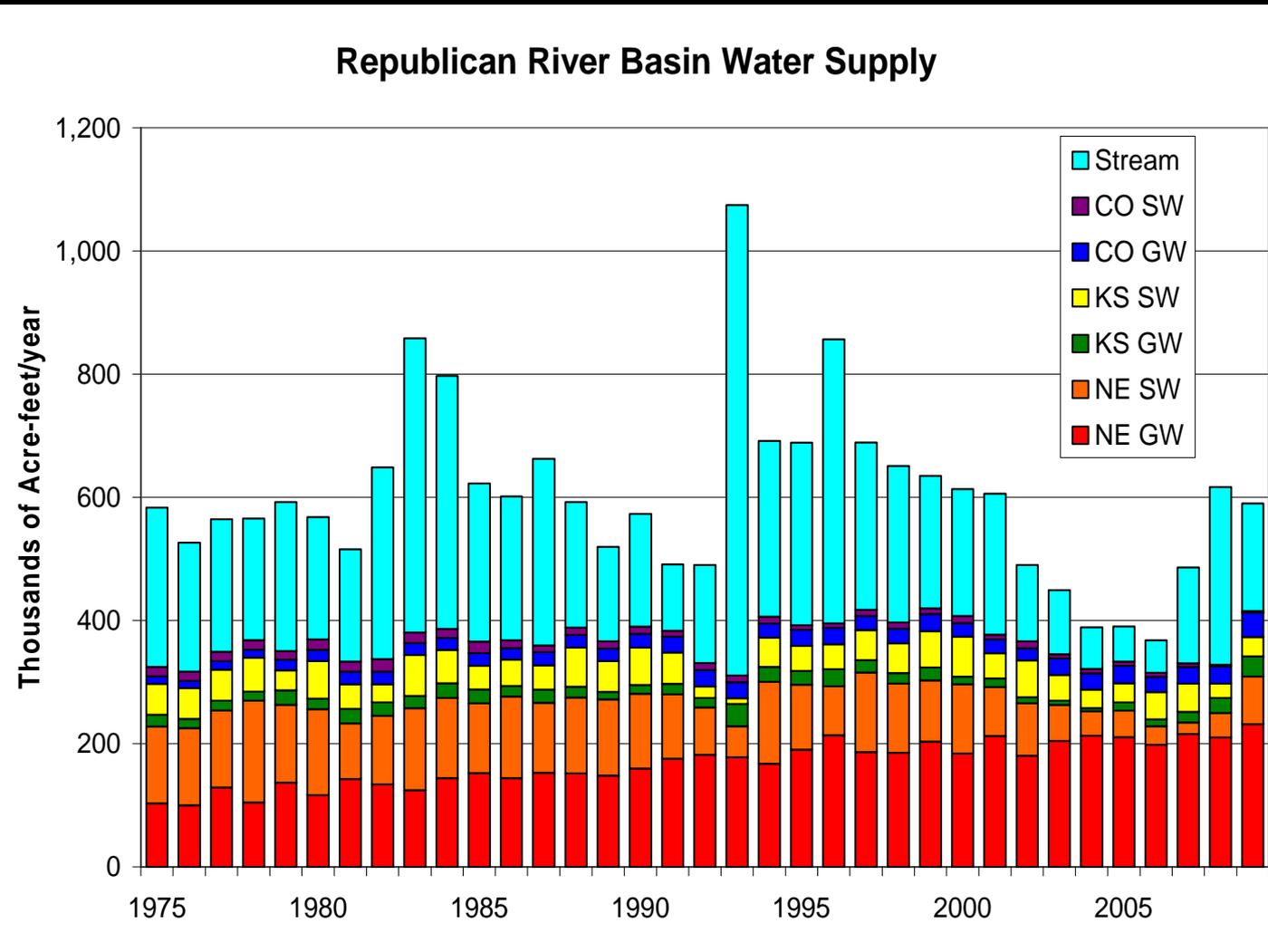
14 Natural Resources Districts

- 10 natural resources districts have completed IMPs
- 4 natural resources districts are in the process of developing IMPs

Monitoring and Studies

- Tracking ongoing management activities and exchanging information
- Identification, development and implementation of the necessary studies and tools for sound management of hydrologically connected water supplies

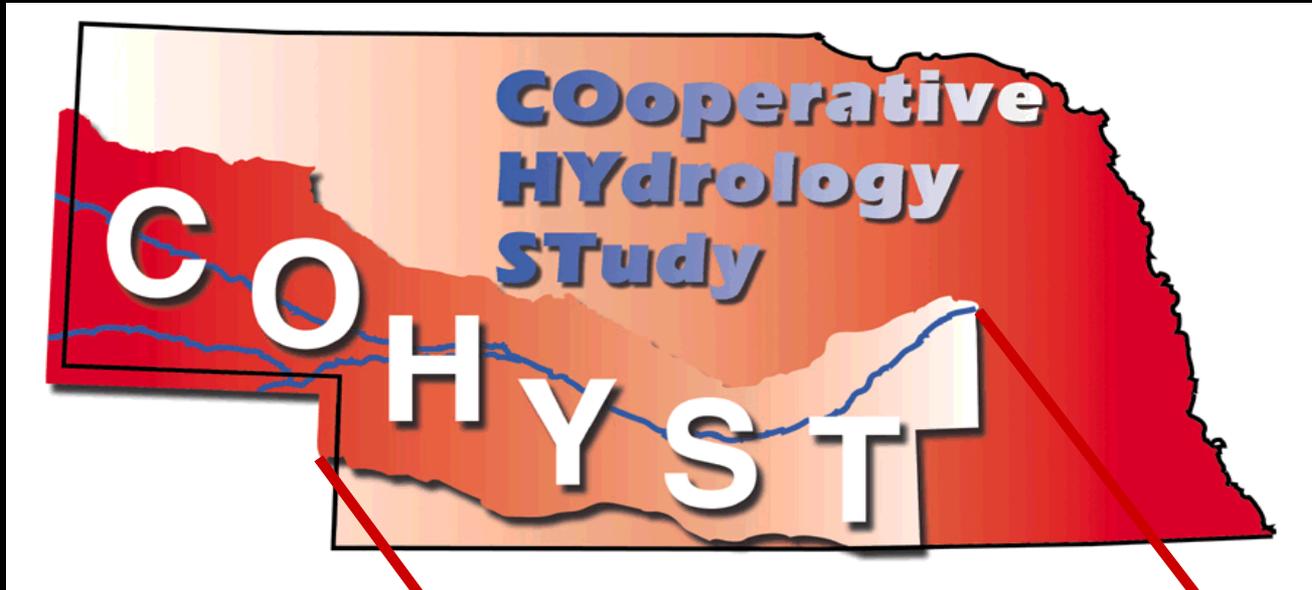
Republican River



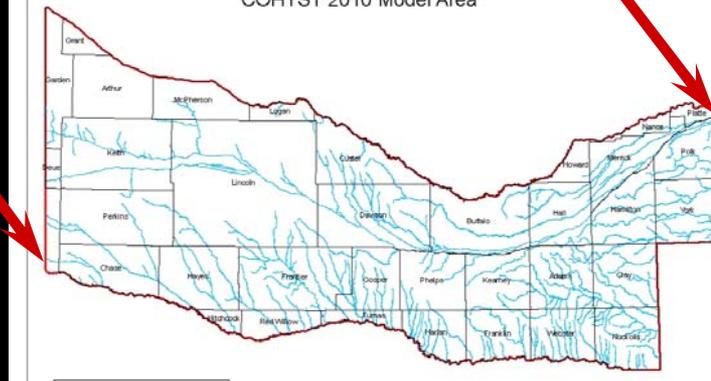
Republican River

- Dry year projection of next year's water supply
- Track by NRD balances
- Triggers for management actions
- Conjunctive Management Modeling - to *optimize* the availability of water to groundwater and surface water users within and near the Republican River Basin, while ensuring Nebraska is able to satisfy Compact requirements.

COHYST



COHYST 2010 Model Area



Western Water Use Model

- Redevelopment of COHYST Western Model Unit
- Development of surface water operations model
- Integration of models for conjunctive management analysis

Lodgepole Creek Study

- How do depletions or accretions to flow translate to changes in streamflow in the South Platte River in Nebraska?
- Refine the existing stream depletion analysis completed by COHYST (2008) – Proportion of depletions that occur in Lodgepole vs. South Platte
- Evaluate the feasibility of utilizing flows in the Lodgepole Creek subarea to augment flows in the South Platte River

North Platte River Studies

- Development of surface water operations model for integration with regional groundwater model and runoff model
- Development of a management options plan
 - *Evaluation of potential management alternatives*
 - *Cost benefit analysis of alternatives*
 - *Pre-feasibility evaluation of select alternatives*

UNWNRD Conjunctive Management Model

- Development of a hydrogeologic framework for the Niobrara Basin
- Develop the necessary tools and models that will provide the flexibility to analyze potential conjunctive management options that the UNWNRD and NDNR will consider through the integrated management planning process
 - Land use model
 - Groundwater model
 - Surface Operations model

Niobrara Basin Study

- Bureau of Reclamation funded study providing \$350,000 (in-kind funding) to define options for meeting future water demands – expands UNWNRD studies to entire Niobrara River Basin
- Assist in the development and implementation of IMPs and other water planning activities
- Identify opportunities for meeting water supply needs through structural and nonstructural means
- Analyze potential effects of climate variability on water supply

Statewide Water Use and Supply

- Utilize CROPSIM Model developed at UNL by Dr. Derrel Martin
- Location-based parameters for soils and crop types established for different parts of the state
- Quality assurance and quality control task
- Surface water data compilation
- Develop statewide framework
 - Construct water portfolios for the state
 - Prepare future scenarios
 - Construct management strategies

Summary

- The process of developing and adopting IMPs in fully and overappropriated basins is an important first step.
- Implementing the proper monitoring and studies is critical to the success of integrated management.
- The Department, in collaboration with the NRDs, is developing the science needed for the success of integrated management and water planning for the State of Nebraska.

Thank you!

Questions?

