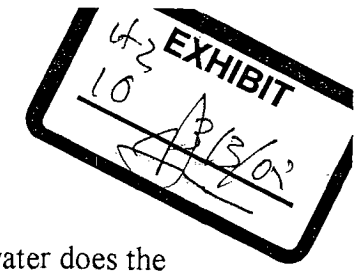


Upper Republican NRD Allowances and Depletions

How much water is the URNRD allowed each year? How much Modeled water does the URNRD use each year? Is the URNRD over or under its allowance each year, and is it projected to be over or under its allowance over the next 35 years?

Coming up with the answers is not easy. This is not because the computer simulation that makes these estimates can't do the simulation, but because the URNRD has not asked for this information. Hence, it has to be pieced together from various sources. (Note, it is a major dereliction of duty for the URNRD to fail to obtain this information before agreeing to an Integrated Management Plan.)

Definitions:

URNRD - Upper Republican Natural Resource District - Responsible for managing ground water in Chase, Perkins, and Dundy Counties in Nebraska.

DNR - Department of Natural Resources - Responsible for managing surface water in the State of Nebraska.

Allocation - The URNRD has been allocated a portion of the Virgin Water Supply available to groundwater irrigators. This portion is called the allocation. For graphing purposes, this article assumes the URNRD gets 44% of the Nebraska allocation. This is not accurate, for there is no set allocation for the Tri Basin. So, the URNRD gets less than the 44% of the Ground Water Allocation. However, that amount less is unknown and will fluctuate based on the Tri Basin share set by the DNR. The URNRD allocation is derived by taking the Virgin Water Supply minus Surface Water usage minus Tri Basin usage (historically, this has been a credit) to end up at the Allocation available for each of the three Republican NRDs. The URNRD share is 44% of this number.

Depletion - The amount of water that failed to arrive at the stream because of some activity by man. Terraces, strip till farming methods, ground water pumping, and surface water diversion all cause depletions. Trees also use water. However, the Model only considers depletions caused by ground water pumping.

Model - A computer simulation used by Kansas, Nebraska and Colorado to manage ground water.

Virgin Water Supply (VWS) - The total amount of water available for allocation to each State. The VWS is a combination of precipitation and seepage via springs from the aquifer. The water that would have seeped from a spring but did not, due to pumping, is also a part of the VWS.

In the graphs below, the blue line represents the projected URNRD allocation for the next 35 years. It is very much a guess, as precipitation has a huge influence on this number. The

DNR took the 1980 through 2000 weather pattern and assumed it repeated itself during 2001-2020 and 2021-2040. The trend is for the allocation to increase by about 1% per year due to a 20 year trend of increasing precipitation.

The red line represents the depletions caused by the URNRD. As long as the blue line is above the red line, the URNRD is within its permitted usage. If the red line is higher than the blue line, then the URNRD must reduce usage to stay in compliance. The red line is growing at about 1% per year.

The light blue area represents the three year average surplus or shortage. The Settlement Agreement with Kansas permits 5 year averages and 3 year averages for the State of Nebraska. Here, we assume that the other NRDs are within their average allowance.

The graph shows that the URNRD would be out of compliance in 2012 and need to reduce usage by a thousand acre feet. It would be out of compliance again in 2022, 2023, and 2032. Remember that this makes a major assumption regarding the weather.

This assumes that CREP retires 50,000 quick response wells and that EQIP also retires 10,000 quick response wells. It also assumes that the Tri Basin continues to provide a credit to the Basin at the level it does now.

In summary, what the graphs are telling us is that a 5% reduction from 14.5 to 13.5 acre inches is unnecessary. It also tells us that if Tri Basin does not make any new uses and that 60,000 acres of irrigated land is taken out of irrigated production anywhere in the Republican Basin, then over the next 35 years, few adjustments need to be made in order to stay in compliance with the Settlement Agreement. A small water transfer plan would act as a shock absorber for any temporary shortages caused by weather. Any other reductions that are being made are not related to the Settlement but are instead to meet someone's agenda of slowing aquifer reduction. That is a legitimate goal but not one that should hide behind the Settlement and use it as an excuse for action.

Written by WaterClaim. www.waterclaim.org

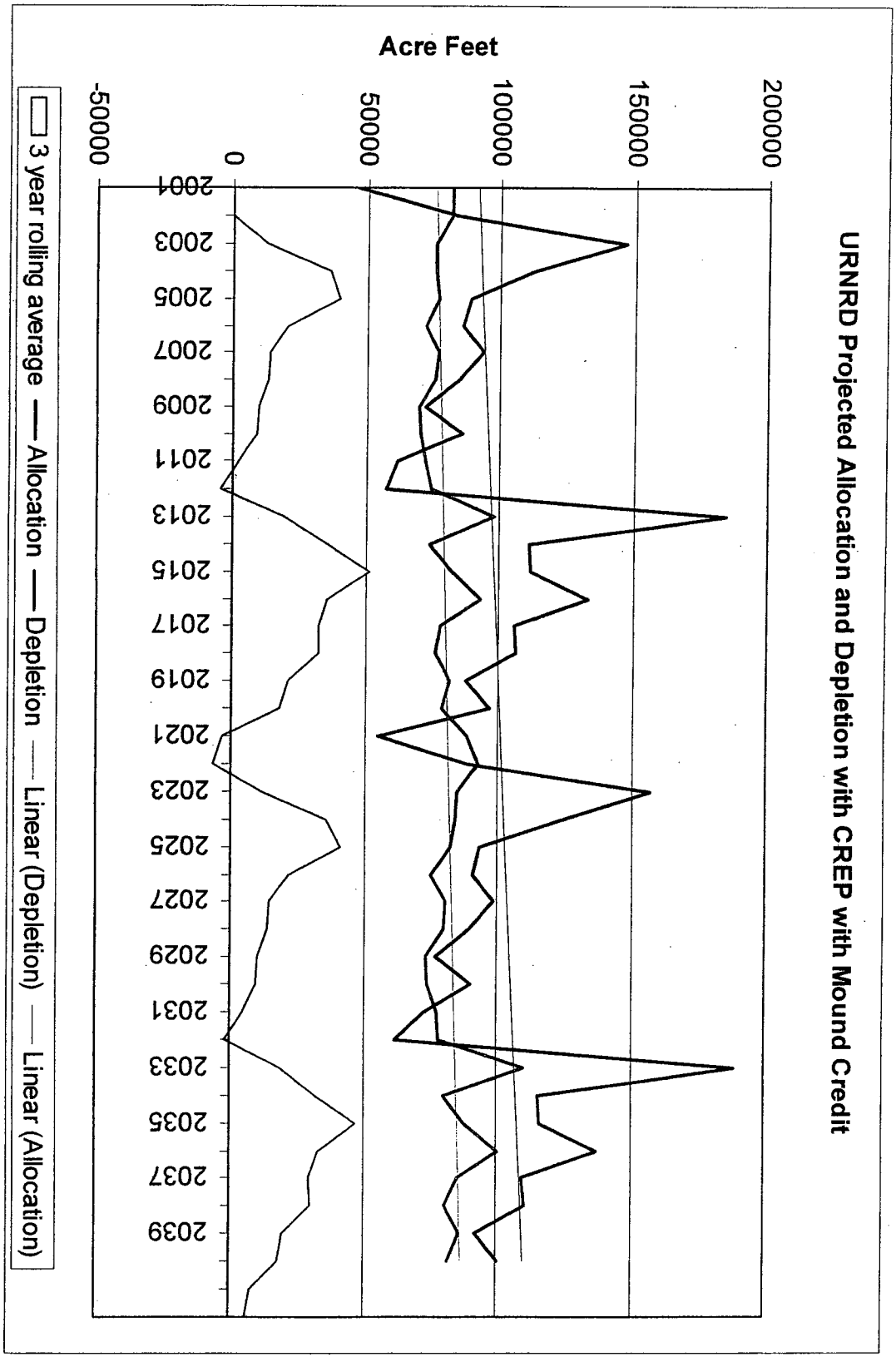
Data Sources:

Projected Allocations - Reduction Baseline.Repeat 81-2000 sw.xls Paper copy only. Only known source of projected allocations.

Projected Depletions - DNR Hard Drive, Accounting_Support_Files/NRD_Impact.xls

Projected Depletion Reduction caused by CREP/EQIP - Impact Reduction for Eliminating Pumping in the URNRD _Quick Response Cells.xls; email from Paul Koester, DNR, 2/28/05

URNRD share of the responsibility - 44% - URNRD Integrated Management Plan



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