Oklahoma Irrigated Agriculture

Purpose and Background of the Oklahoma Irrigated Agriculture Workgroup

Two Irrigated Agriculture workgroups (one in the Southwest and one in the Panhandle) were formed to discuss water-related concerns, challenges, and needs, and to explore mitigation options. Crop irrigation is the largest consumptive water sector in Oklahoma and water demands are projected to increase by 14% by 2075. In 2024, food and agriculture sector contributed to over 640,000 jobs and $10 billion in business taxes (Feeding the Economy). In 2022, agriculture production and processing industries represented 2.5% of total state gross domestic product (University of Arkansas).

The overarching goal of the Irrigated Agriculture Workgroups was to 1) define a path towards more sustainable groundwater reliance that maintains landowner rights and farm and ranch income and 2) support data collection, education and outreach, and funding for implementation of projects that reduce water

Workgroup members included representatives from:

- Oklahoma Conservation Commission
- Oklahoma Department of Agriculture and Forestry
- Oklahoma Farm Bureau
- Oklahoma Water Resources Board
- U.S. Department of Agriculture, Natural Resources Conservation Service
- Lugert-Altus Irrigation District
- Oklahoma Panhandle Agriculture and Irrigation Association
- Oklahoma State University
- Ritter Water Well Service
- Agricultural producers

These workgroups were formed in 2022 and met approximately five times through 2023. Many workgroup members went on to join the Panhandle and Southwest Focus Basins. Discussions within these groups focused on long-term holistic planning to improve agriculture longevity and irrigation efficiency in Oklahoma. Three key areas of success identified were:

- The need for local management structures and regionalized planning to identify locally preferred and locally-tailored solutions.
- Broader stakeholder inclusion of other water users, industries, and community leadership.
- Education geared towards better management, more accurate data collection, and broader, real-time groundwater monitoring data.

While it is not recommended that these workgroups continue, **it is recommended that the Panhandle and Southwest Focus Basins (or members from these) continue to provide input as the Southwest and Northwest regional recommendations are explored and implemented as funding is available**.

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These are some of the resources that the workgroups used in their discussion.

The Sustainable Southwest Beef Project provides a variety of information, including webcasts and podcasts.

The Water-Level Changes in the Ogallala Panhandle Aquifer report looks at long-term (1982-2022) and more recent (2002-2022) water level changes in the Ogallala Aquifer which is the primary water source for all demand sectors in the Panhandle.

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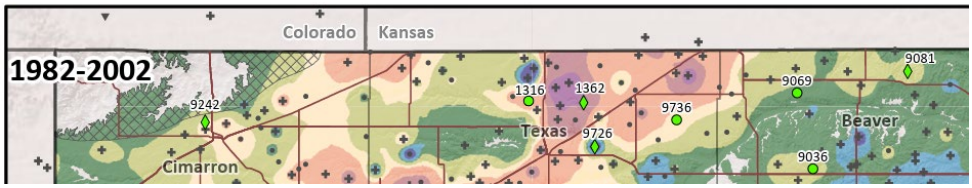
Water-level changes in the Ogallala Panhandle aquifer (1982-2022)

By: Zachary D. Tomlinson, Derrick L. Wagner, and Christopher R. Neel



Members of the groups expressed interest in learning more about local groundwater irrigation district formation. Information from neighboring Texas and Nebraska was presented as possible starting framework for what could be created in Oklahoma.

	Texas Groundwater Conservation Districts (GCDs)	Nebraska Natural Resource Conservation Districts (NRDs)
Driver	• Because of how TX water law is structured, there was a "race to the bottom" where the "biggest pump wins" • GCDs concept arose to give local boards the authority to adopt rulemaking to limit production, set spacing requirements, and encourage conservation • Maintain a balance between protecting the rights of private landowners and responsibility to protect water while reducing conflicts	• Over mining of GW was occurring • Existing system was chaotic -- numerous special purpose districts with overlapping authorities • Nebraskans value local control • NRDs were created in response
GW Law	• GW belongs to the landowner and is governed by the rule of capture, which grants landowners the right to pump and capture the water beneath their property • GW ownerships rights are subject to regulation and control by the courts and legislature and several exceptions have been created	• State DNR regulates SW under an appropriative rights doctrine • NRDs regulate GW under a modified correlative rights/reasonable use framework
Authority	• Required to develop a GW management plan • Can set production limits on GW based on acreage or tract size and setting spacing requirements • Adopt rules to implement the plan • Keep drilling records • Permit and register certain wells • Levy taxes and set fees • Conduct surveys, research, monitoring programs • Sponsor water conservation efforts	• Much broader than just GW, includes all natural resources • Can implement rules to restrict GW use to prevent overharvesting • Required to prevent overharvesting of GW in areas where SW and GW are hydrologically connected • In some areas, have been able to prevent overharvesting by education and assistance to irrigators; other areas the GW table is declining • Set their own tax levies • Some have special bonding authority
Formation	• Created in one of 4 ways: action of legislature, petition by landowners, initiation by TCEQ, petition to join an existing GCD	• Already formed through legislative action
Agency Interaction	• TCEQ has authority to designate an area as a priority GW management area, thus requiring a GCD to form • GW management plans approved by TCEQ	• No state-level institutions that set rules, all local governance • When there is SW/GW interactions, state DNR has authority and must work together with NRD
Tax Rate	• Most GCDs tax at less than 5 cents per $100 assessed value • By law the tax cannot exceed 50 cents • Tax rate approved by a local election	• Taxes on all privately held land but the rate varies • Funding includes flood control, rec, pollution control, etc.
Boundaries	• District boundaries may or may not coincide with aquifer boundaries • Many follow county boundaries • Areas of the state with no GCD	• Boundaries follow surface watersheds; full coverage across state
Key Takeaways	• Filled a gap between individual rights protected through water law and protection of the resource • Formation is voluntary or can be forced by state agency • Funded through tax or fees • Rulemaking authority	• NRDs can and do implement different rules to fit differing conditions among and within NRDs • Sole GW authority that is implemented at the local level • Have a much broader role in management of natural resources at the watershed level

The Master Irrigator Program at OSU was identified as a huge success towards meeting producers goals and improving management of the shared groundwater resources. The group recommended this program should be continued and expanded.

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