

# A WINNING TRADE

## How Water Markets Can Benefit Texans & the Environment

### TEXAS FACES UNPRECEDENTED, SHIFTING WATER DEMAND

Water demand in Texas will rise over 18 million acre-feet by 2030. For the first time ever, municipal demand is projected to exceed agricultural use by 2060. Amid these shifts, environmental demands remain largely unmet.

Building out new supplies to meet demand is increasingly difficult and more expensive than conservation and demand management. In this context of scarcity and rising costs, water markets are emerging as a critical, cost-effective efficiency mechanism that deserve lawmakers' attention.

### WATER MARKETS CAN ENSURE EFFICIENT USE OF AVAILABLE SUPPLY

Water markets can be an important tool for ensuring efficient use of available water, including ensuring adequate water for the environment. To gauge how water markets are developing in Texas and how they might best be used for public benefit, we conducted the first statewide analysis of historic water market trends.

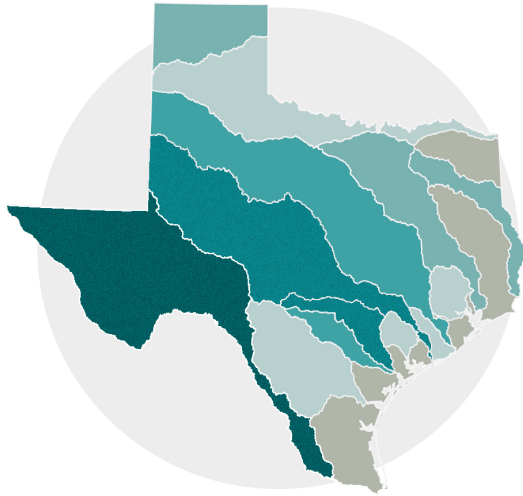
We present here some of our key findings. You can read the full report at [nature.org/texaswatermarkets](https://www.nature.org/texaswatermarkets).





# Texas water markets are...

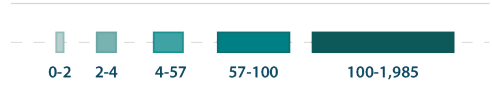
Our new transactions database compiles, for the first time ever, statewide data on water trading from the past three decades. Our analysis reveals the following emerging trends:



## ...diverse

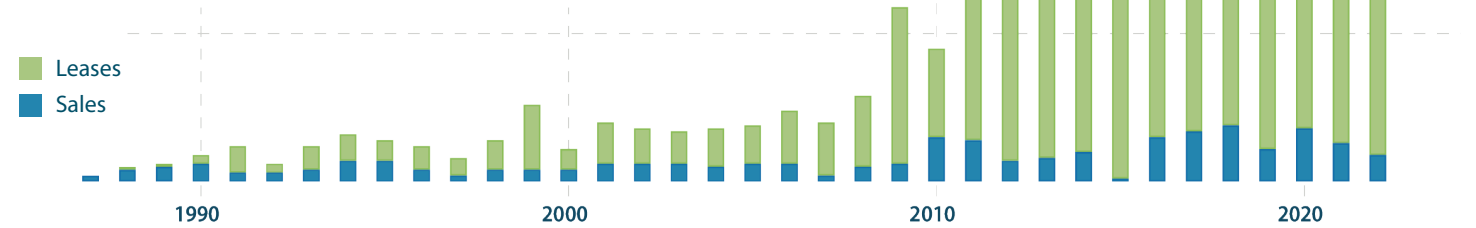
Formal water market trading is occurring in 13 basins across the state. Basins have unique transaction patterns suggesting they need to be approached as distinct units.

Number of surface water transactions 1987-2022



## ...expanding

Water market activity is increasing across the state. Leases, which have particularly accelerated in the last decade, offer a flexible option for users and can help buffer against acute water scarcity or shortages.



## ...and shifting to cities

Like other water-scarce areas, Texas shows a trend in reallocation from rural use to urban use across 13 basins in the state. In addition, an increasing amount of water has been reallocated to the environment over the last decade.



This graphic shows flows of transactions between previous (left) and new use (right). Flows are displayed proportionally, e.g., "new" municipal use is over 50% of all new uses.



Many Texas river basins currently have inadequate flows to sustain healthy populations of fish and other species. *Photo: Jerod Foster for The Nature Conservancy*

## What role can markets play in a sustainable water future for Texas?

### ENVIRONMENTAL TRANSACTIONS CAN PROVIDE WINS FOR PRODUCERS AND ECOSYSTEMS

Flow requirements for species and habitat are currently unmet in many Texas river basins. Environmental water transactions—which have increased over the past decade—can incentivize producers to leave water in stream for compensation. This voluntary transaction provides farmers an income stream during drought. In turn, an NGO can use that water to help improve instream habitat.

### WATER MARKETS CAN CONTINUE TO HELP CITIES SATISFY GROWING DEMAND

Increased water scarcity due to population growth and drought are driving Texas cities to develop new and alternative water supplies. Our full report analyzes large scale water transactions by the cities of Corpus Christi, Austin, and San Angelo to provide examples of how different cities are using water markets, in differing ways, to help secure needed supplies.

### PRODUCED WATER HAS POTENTIAL IN A CIRCULAR WATER MARKET

Considering the levels of risk and uncertainty associated with marketing produced water in the short term, we encourage future research and investments to focus on water market design *within* the industry. This circular market could offset the demand that is currently being placed on native water supplies (e.g., groundwater wells). It could also provide an economic incentive for oil and gas operations to improve cleaning technologies which could lower the cost of treating produced water to an acceptable level for potential future uses.

## What's working?

### FUNCTIONAL CAPS ARE IN PLACE:

while formal limits are missing in Texas, there are effective limits on granting new water rights permits largely because basins are fully allocated and some have Environmental Flow Standards in place.

**DAY-TO-DAY OVERSIGHT WORKS WHEN IN PLACE:** where in place, Texas watermasters are providing near real-time regional oversight, as well as conflict resolution in areas of scarcity.

**WATER MARKETS ARE FULFILLING MULTIPLE NEEDS:** hundreds of transactions have reallocated water to municipal uses while environmental transactions are the largest growth area in Texas water markets.

**THE LEGISLATURE HAS SUPPORTED WATER MARKETS:** the creation of different water institutions, such as the Texas Water Bank and Water Trust, has provided some of the necessary governance for water markets to incubate and develop.

## What's limiting growth?

**PERMITTING TIMELINES**, especially for permanent sales, are restricting trading.

**BED AND BANKS PERMITS**, as currently applied, are limiting water rights holder's ability to market their right for all beneficial uses (e.g., instream), which restricts market "depth".

**THE HONOR SYSTEM** for water users to report and manage their own water usage, although appropriate 100 years ago, is no longer an effective approach to monitoring surface water and can jeopardize market viability, private property rights, and the reliability of water rights management.

**THE BIFURCATED LEGAL SYSTEM** of appropriated state water (surface water) vs. private groundwater creates a challenge for users and limits overall confidence in market activity as compared to other western states.

# Recommendations for the Texas Legislature

We have outlined seven evidence-based, feasible recommendations for the Texas Legislature which could improve the benefits of water markets for people and the environment.

**1. INCREASE FUNDING FOR THE WATER BANK AND TEXAS WATER TRUST, AND TRANSFER THE WATER TRUST TO TPWD.** These institutions require funding and support for designated staff to promote and manage. Oversight by an institution working on environmental issues provides a better institutional “fit” for the Water Trust.

**2. CONSIDER EXPEDITED APPROVAL PROCESS FOR PERMIT AMENDMENTS** to implement short term leases that involve only a change in diversion points, place, and purpose of use among users based on regional specific metrics (e.g., river miles) and that would not adversely affect environmental flows or availability for existing rights. At present, with narrow exceptions, transactions are required to follow the same amendment protocols regardless of whether they involve a change in location of one mile or 50 miles. An expedited permitting system for transactions of a specific type (e.g., leases) within a specified range (e.g., defined for each basin) could promote more trading by lowering transaction times and associated costs.

**3. REVISIT RESTRICTIONS ON BED-AND-BANKS PERMIT APPLICATIONS AND ALLOW FOR AUTHORIZATIONS OF ALL BENEFICIAL USES.** Current interpretation of bed-and-banks authorizations is too narrow and precludes transactions that could provide benefits to different water users. In particular, authorizations for environmental flow protection should be allowed, without requiring a physical diversion, when existing rights are protected and a new appropriation is not involved.

**4. EXPAND WATERMASTER PROGRAMS.** Watermasters have a proven track record of improving management of water rights and water market conditions in Texas. Regional watermaster programs can better serve needs of water users at the basin level by providing near real-time protection of water right holders that is not available outside of watermaster areas.

**5. CONDUCT A COMPREHENSIVE STUDY ON NONUSE OF WATER RIGHTS.** Significant opportunities to pursue transactions or dedications to the Texas Water Trust may exist as a result of water rights with extended periods of limited or no use (e.g., >10 years). Identification of such water rights could reveal the potential for transactions, including through placement in the Water Bank or the Texas Water Trust.

**6. FUND STUDIES ON GROUNDWATER/SURFACE WATER INTERACTION** to quantify the impact of groundwater withdrawals and water management on surface water rights. Many regions where surface water rights exist are influenced by groundwater pumping which is not managed conjunctively. Similarly, groundwater supplies can be affected by surface water pumping. Studies to help quantify the relationship between groundwater pumping and surface water withdrawals would provide the potential to improve the management of both water resources and, especially, to improve water planning.

**7. PROVIDE GROUNDWATER CONSERVATION DISTRICTS WITH THE RESOURCES,** including updated and improved groundwater availability models, they need to identify and manage for sustainable levels of groundwater pumping. Improved information and management approaches, including consideration of environmental needs, would set the stage for more effective water markets.

[DOWNLOAD THE FULL REPORT  
NATURE.ORG/TEXASWATERMARKETS](https://www.nature.org/texaswatermarkets)



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WATERS  
PROJECT**



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