Elements of Effective Water Conservation Legislation in Texas

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Introduction

The purpose of this project is to introduce the critical nature of effective water conservation. Subsequently, this project shows how necessary effective legislation is and why the situation needs to radically change to mitigate the possible negative outcomes.

- "Water is a physical, cultural, social, political, and economic resource" (Saltzman, 2017, p. 56).

Population Growth and Drought

In 2022, the National Integrated Drought Information System stated that 71.1% of Texas had descended into a severe drought (Drought in Texas, 2022). Likewise, Texas' population growth rate is higher than the national average, adding 0.4 million to 0.59 million yearly to the population, maintaining its position as the second most populous state in the United States (Texas Population, 2022). One in three people globally cannot access clean drinking water (Rahm, 2019). The Texas Water Development Board and Legislature did not address concerns for climate change in the most recent State Water Plan. State Water Plans are published every 5 years.

Project Purpose

The purpose of this applied research project was to generate an ideal framework for effective water conservation. First, the curation of the ideal components of water conservation legislation came from a thorough literature review. Next, this ideal-type framework helped assess the processes currently used by the Texas Legislature and other practices in use by other states and countries. Third, Texas water and policy experts were interviewed to discuss what needs to be in an ideal bill and offer recommendations to improve the framework. Fourth, the evaluative process helped identify the shortcomings and strengths of the Texas Legislature's approach to address this critical policy issue using passed Senate Bills 1 (75R), Senate Bill 2 (77R), and Senate Bill 3 (79/80R) as context. Finally, recommendations to improve current lawmaking practices developed based on the literature review, document analysis, and interviews from Texas water and policy experts.

Snapshot of SB 3 Process and Evaluation (Source: Texas Living Waters Project, 2022).

Systems Thinking

This project advocates for the change in the Texas legislature's current policymaking practices. By discussing ways to change the current system, the Legislature has an opportunity to save more water and change the public perception. For instance, increasing the role of agricultural stakeholders, who are the largest water use sectors in Texas, and giving them incentives to switch to more water efficient methods can save water for the whole state (Guz, 2022). By 2070, agriculture irrigation demand should drop from 9.4 million acre-feet per year to 7.6 million acre-feet per year. Improved irrigation efficiency, reduced groundwater availability, and the transfer of water rights to urban sectors will all contribute to the trend of reduced agricultural water demands. Systems thinking allows for understanding of the web of interrelations that create these challenges. Management and policymakers are heavily influenced by social values and economic priorities. Cities and states are complex interrelationships within themselves that play a vital role in the economic success of all involved.

Definitions

Water Conservation

Water conservation is known as efficiently using water to reduce unnecessary usage of crucial water sources, such as clean drinking water (Saltzman, 2017). Only three percent of Earth's water is freshwater, with only 0.5% available for drinking (Evans, 2020). The Texas Water Code and the Texas Administrative Code define conservation as practices to "increase the recycling and reuse of water so that a water supply is made available for future or alternative uses." Tex. Water Code § 11.002(8)(B); 30 Tex. Admin. Code § 288.1(4).

The following four categories were found to be the ideal components of effective water conservation:

☐ **Economic Development**
- Increase the role of agricultural stakeholders
- Promote Job Creation and Green Infrastructure
- Enact Tax Incentives

☐ **Social Capital & Welfare**
- Education & Public Interest
- Human Rights and Ethics
- Population Growth, Climate Change, and Water Supply Management

☐ **Statutory Authority and Case Law**
- Cleanliness and Safety Standards
- Groundwater Management and National and State Legal Environments
- Local Legal Environment

☐ **Agency Design**
- Structure of agencies
- Regulation and Rulemaking
- Program Evaluation

The San Marcos River is pictured below. Local communities will quickly lose their right to clean water without considering climate change and economic development. Some regional water providers have banded together to create voluntary, informal planning groups called Water Efficiency Networks to enhance their efforts. The Texas Living Waters Project has supported development of these networks and describes them as groups of "water providers and water conservation advocates that meet monthly with a purpose of learning about the latest conservation tools being used locally and globally." (Guz, 2022).

Photo by Kaylee Boggan.

Pictured to the right is a clean up event focusing on water conservation education and awareness including individuals from Keep San Marcos Beautiful and Bobcat Stream Team. These individuals want to help in anyway they can make a difference. Photo by Kaylee Boggan.

Methods

Data collection methods included interviews and document analysis, which are both qualitative research methods.

Document Analysis

The purpose of the document analysis was to establish if there was enough evidence in SB1, SB2, SB3, and the 2022 Texas State Water Plan to support the working hypothesis pertaining to effective water conservation legislation.

Interviews

In this study, five interviewees were asked specific questions about their experiences and characteristics of the ideal components of effective water conservation legislation. The interview participants for this study included directors of advocacy programs and nonprofits, water conservation experts, academics with a background or concentration on water conservation, and public policy officials who serve the people of Texas and are tasked with providing water conservation recommendations to the legislature through the lobbying process. These individuals were selected because of their expertise pertaining to effective water conservation legislation. Interviews from lawmakers were utilized to capture the value and limits of effective water conservation legislation.

The Legislature met with a variety of stakeholders across the state to discuss what is necessary to include in effective legislation regarding water. The schedule is pictured above. Photo by Kaylee Boggan.

The speakers pictured above met at the capital on Feb 27, 2023, to discuss the new plans for Texas Water Conservation and Water Legislation for the 2023 Legislative Session and beyond. Photo by the Texas Water Foundation.

Bobcat Stream Team and the San Marcos Rover Rangers are organizations that are vital in bringing community awareness to water conservation in Texas.

Photo by Kaylee Boggan

Discussion

The interview results showed that 60% of interview participants consider the current water conservation legislation in Texas to be lacking. The document analysis of SB. 1, SB. 2, SB. 3, and the 2022 Texas State Water Plan found that the hypotheses pertaining to statutory authority and economic development were not adequately supported and had little evidence of being used effectively. 80% of interviewees thought that the statutory definition of water conservation was not sufficient and should be updated. Further, by defining water conservation as including "reduction in water use or losses," conservation programs should result in lowered water usage over time (Guz, 2022).

In addition, both research methods showed support for agencies needing goals and monitoring to achieve success. Holland-Stegar (2018) claims that the structure of agencies should focus on adjusting management responsibilities and distinguish between strategic change and operational. Effective water conservation legislation and structured agencies should include monitoring goal guidelines for water conservation that are considered by water agencies, along with monitoring the implementation of the water conservation strategies included in regional water plans (Guz, 2018).

Conclusion

In conclusion, the project demonstrates why effective water conservation in Texas is necessary with the legislative standards of economic development, social capital and welfare, statutory authority and case law, and agency design. The standards created a framework which tested if passed legislation was effective through working hypotheses. The methods and procedures helped set up the practice for conducting the research methods. The findings established that there needed to be more inclusion of economic development and citizen science programs to ensure that the local communities are involved.

Future Research:

This research aims to adopt the ideal components for effective water conservation legislation in Texas, which should include efficiency regulations and program evaluations. Obstacles to mandated use of efficient technology can in part be overcome by providing sufficiently long transition periods to allow stakeholders to prepare for the change (Guz, 2022).

- Once water-efficient technology becomes comparable in price to more water-intensive options, it is not difficult to get stakeholders to transition permanently to the efficient technology.
- One of the best ways to see if a program is improving is metrics and quantitative measurements. The program should be feasible, ethical, and accurate to current conservation methods and science.

Citizen Science Programs and their evaluations need to include ways to ensure that groundwater is not over pumped and regularly reported, because surface water is becoming less dependable due to growing populations and climate change (Douglas, 2022).

References

Busetto, L., Wick, W. & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurol. Res. Pract.* 2(14), p. 1-10. https://doi.org/10.1186/s42466-020-00059-z.

Douglas, E. (2022, Oct. 31). Texas' Plan to Provide Water for a growing population virtually ignores climate change. *The Texas Tribune.* https://www.texastribune.org/2022/10/31/texas-water-plan-reservoirs-climatechange/#:~:text=Texas'%20plan%20to%20provide%20water,two%20dozen%20new%20large%20reservoirs.

Drought in Texas. (2022). *www.Drought.gov.* https://www.drought.gov/states/texas.

Guz, K. (2022). Water Conservation. M. K. Sahs & H. Heinrich (Ed.). *Essentials of Texas Water Resources (7ᵗʰ edition).* Austin: State Bar of Texas.

Guz, K. (2018). *Progress Made in Water Conservation in Texas Report and Recommendations to the 86th Texas Legislature Report.*

Holland-Stergar, B. (2018). The Law and Policy of Rainwater Harvesting: A Comparative Analysis of Australia, India, and the United States. *UCLA Journal of Environmental Law & Policy,* 36(1), 127-165.
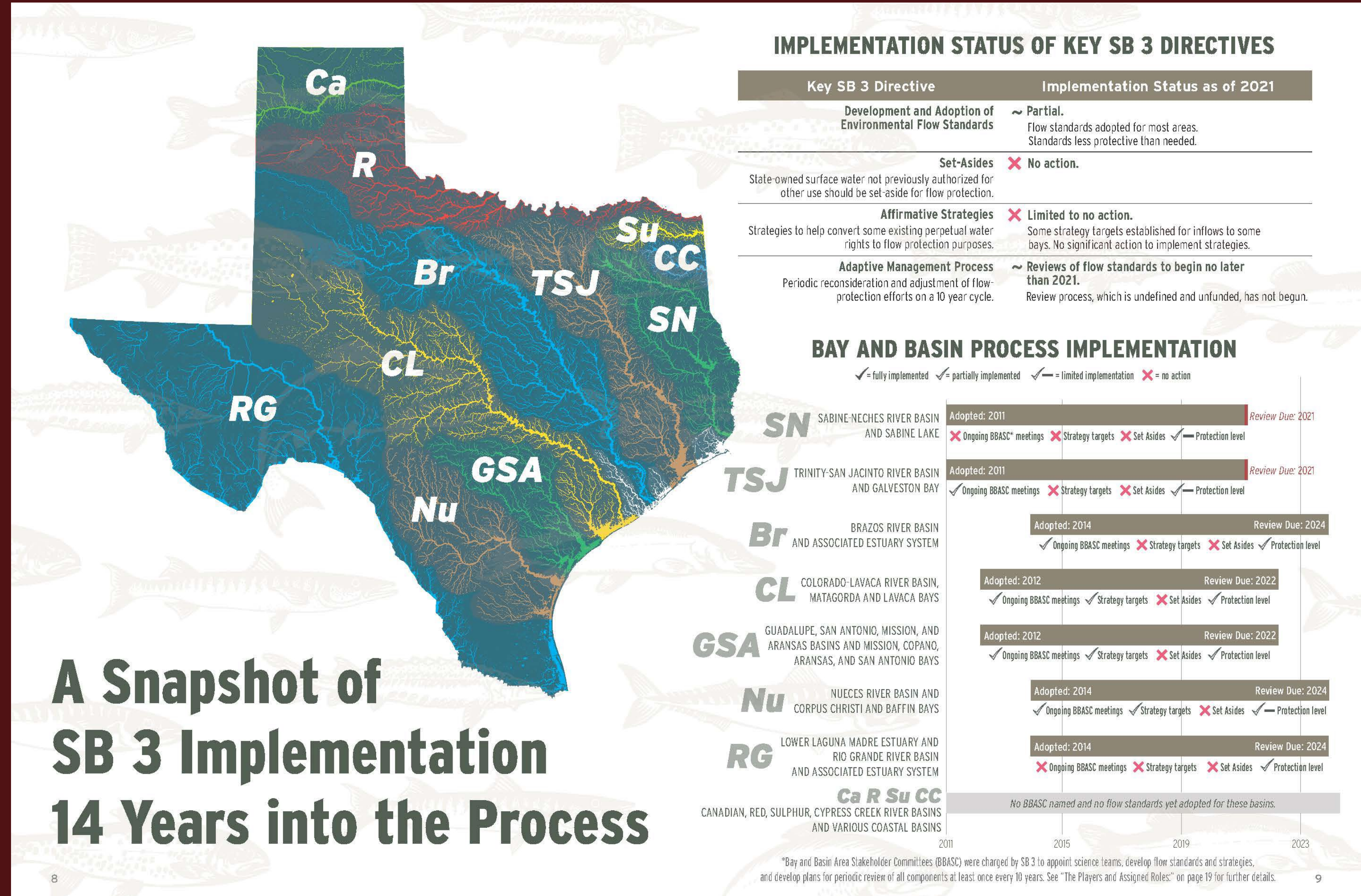
Legislative Reference Library (2022). "Legislation | Water law timeline – Texas". Retrieved from Texas Legislature Online - Legislation.

Rahm, D. (2019). *U.S. Environmental Policy: Domestic and Global Perspectives.* St. Paul, MN: West Academic Publishing.

Saltzman, J. (2017). *Drinking Water: A History.* New York, NY: Peter Meyer Publishers.

Texas Living Waters Project. (2022). Course Correction: How to Unlock the Unrealized Potential of Senate Bill 3 For Achieving Meaningful environmental flow protection. Retrieved from Course Correction: How Texas Can Unlock the Unrealized Potential of Senate Bill 3 For Achieving Meaningful Environmental Flow Protection – Texas Living Waters Project.

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