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Cooperation, Fragmentation and Control: News Media Representations of Changing Water Access From Austin to the Texas Rice Belt

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ABSTRACT: The waters of the Lower Colorado River Valley of Texas have sustained urban populations and agricultural operations for over a century. More recently, however, rapid urban growth, continued economic development, and a changing climate have led to the prioritisation of urban over agricultural water uses. This research analyses public discourse found in newspaper coverage of water-related issues to understand how media represents two decades of change in the control of water resources along an urban-to-agricultural gradient. It documents the changing relationship between long-established commercial agricultural water users and the increasing water demands of one of North America's fastest growing urban areas and identifies the discourses and counter-discourses that are used by urban and agricultural interests to constrain or enable access to the basin's water resources. Findings indicate that the water-related discourse has evolved through distinct periods of cooperation, fragmentation and control. These periods are defined by the mechanisms that urban and agricultural interests have used to constrain or enable water access. Themes identified suggest that urban interests have increasingly expanded their influence in decisions related to water distribution and that they have done so by forming strategic alliances with the regional water authority and by leveraging the power of local and state officials in water matters. Agricultural interests have, in the meantime, struggled to maintain access to their historic share of water despite forming new social ties with environmental organisations and despite outlining the importance of water to the local economy.

KEYWORDS: Water resources, allocation, access, media, discourse analysis, Texas

INTRODUCTION

Driven by population growth, continued economic development, and a changing climate, competition for water resources is intensifying across the world (Molle et al., 2007; Hellegers and Leflaive, 2015; OECD, 2015). Under these conditions, water resource systems are reallocating water from rural areas in order to meet new demands, and much of the current reallocation of water is from agricultural to urban uses (Shupe et al., 1989; Molle and Berkoff, 2009; Wagner, 2012). The shift of water from older and more traditional uses, including agriculture, to new demands, such as growing urban areas, is not a new phenomenon. Reallocation of water has been ongoing in arid and semi-arid regions of North America for some time (Shupe et al., 1989). In North America and elsewhere, however, scholars examining both historic and contemporaneous urban growth and urban-rural relations relative to water resources note the existence of an urban bias with regard to issues of water development and management. This bias suggests that urban water interests often prevail over rural, agrarian-based water interests (Swyngedouw, 1997, 2004; Bakker, 2003a; Kaika, 2005; Celio et al., 2010; Scott and Pablos, 2011; Richter et al., 2013; Bell, 2015). The political, economic and ecological currents underlying the transfer of water from rural to urban areas, the spatiotemporal patterns associated with this shift, and the mechanisms used to maintain or acquire water resources provide important insights into how expansion of urban

hydraulic space has connected, altered and transformed urban and rural spaces through increasing control and regulation of water. There is, moreover, a growing awareness that discursive systems play an influential role in communicating claims to water by both urban and rural actors (Beckner et al., 2019) and that analyses of discourse are important to understanding how urban interests expand their claims to water resources (Hommel et al., 2019).

In 2015, for the fourth year in a row, the Texas Commission on Environmental Quality (TCEQ) approved the Lower Colorado River Authority's (LCRA) recommendation to extend an emergency order withholding water from downstream farming communities. Coastal areas of Texas that lie along the Colorado River depend on annual water releases for agricultural irrigation and crop production, particularly rice farmers. Emergency orders in 2012 were the first time that water had been restricted from downstream consumers. Complicated by a host of factors including a prolonged drought, a growing urban water demand, and changing state and regional water management plans, the decisions to withhold downstream water flows drew the attention of many interested stakeholders. Urban and agricultural actors, local and national environmental organisations, and governmental agencies were among the stakeholders who advocated both for and against the LCRA's recommendations.

Debated in public and private forums and picked up by the news media and by other public information outlets, many narratives around the restrictions emerged, with various water users seeking to sway popular opinion in favour of their interests. Agricultural interests viewed the cut-offs as an unlawful appropriation of water. Urban interests mostly lauded the restrictions as essential to preserving human health and wellbeing. These restrictions and the set of accompanying urban-versus-agriculture narratives, however, are only the latest iteration in a series of events that illustrate the evolving relationship between urban and agricultural interests with regard to the allocation of water along the Lower Colorado River. Numerous political, economic and ecological events and many stakeholders have influenced access to, and control over, the basin's water resources.

The purpose of this case study is to document changes in the discursive systems found in news media coverage of water-related issues that were used to enable or constrain water access in a highly developed watershed that was undergoing increasing urban expansion and experiencing chronic, acute drought events. It adds to the growing body of scholarship on urban-rural water conflict in general and urban-agricultural water competition specifically. Past research has examined water reappropriation from agricultural to urban uses in developing regions of the world (Celio and Giordano, 2007; Molle et al., 2008; Celio et al., 2010; Birkenholtz, 2016; Sanchis-Ibor et al., 2019; Garrick et al., 2019), whereas others have documented cases in the American West (Howe et al., 1990; Moore et al., 1996; Villarejo, 1996). More recent research investigates urban-rural water competition in river basins of the American South (Wong and Bosman, 2014; Beckner et al., 2019).

This research, situated in the South Central United States, provides additional information on the reallocation of water from agricultural uses to meet growing urban demands, including residential and industrial uses. I use public discourse, as found in news coverage of water-related issues, to highlight discursive trends related to water use and access in the Lower Colorado River Valley of Texas, while illuminating the effects of a rapidly expanding urban area and environmental stress on agricultural water demands. News media coverage of water-related issues provides a reliable and consistent source of information in which to document these trends. Drawing from political ecology – including Ribot and Peluso's (2003) "theory of access" and work on power, access and control of environmental resources (McCarthy, 2002; Turner, 2009) – I identify the mechanisms used by urban and agricultural interests to constrain or enable access to the valley's water resources. As such, I ask how news media represents the changing relationship between long-established commercial agricultural water users and the recent competing demands of Austin's fast-growing urban population, and through the public discourses found in newspaper coverage of water-related issues, I also ask how urban and agricultural interests attempt to enable or constrain water access given underlying political, economic and ecological conditions.

Resource access and control

The interplay between water, social power and capital is a hallmark of water resource allocation as operationalised through a political ecology approach. Access to water, viewed through a political ecology lens, is contingent on, and constitutive of, intertwined historical, political, economic and ecological factors (Swyngedouw, 1997; Bakker, 2000, 2003b). Within political ecologies of water that examine rural-to-urban water shifts, prominent themes focus on how political power, urban-led institutions, and financial capital originating in urban areas dominate water development, allocation and use (Pires, 2004; Scott and Pablos, 2011; Birkenholtz, 2016). Recent research also suggests that discursive systems influence urban and rural water access (Beckner et al., 2019; Hommes et al., 2019).

Ribot and Peluso's (2003) theory of access provides a framework from which to analyse strategies deployed by urban and agricultural interests that are aimed at strengthening their positions with regard to water distribution and control. Their theoretical framework describes access as "the ability to derive benefits from [resources]" through an examination of the full "range of social relationships that can constrain or enable people to benefit from resources (...)" (Ribot and Peluso, 2003: 153-154). In this understanding, access to resources is constituted within a political ecology backdrop wherein a variety of mechanisms may support or prohibit the control, maintenance and acquisition of access. It is through these mechanisms that access to resources is blocked, granted or gained. Access mechanisms include traditional rights-based or legal access mechanisms, such as laws or societal norms, as well as structural and relational mechanisms that include "access to technology, capital, markets, labour, knowledge, authority, identity, and social relations" (Ribot and Peluso, 2003: 173).

Several scholars have employed this framework to understand the complex processes behind access to natural resources, including water (Sultana, 2011; Bell, 2015) and forests (Kelly and Schmitz, 2016). I extend the framework by examining narratives of access that are found in newspaper coverage of water-related issues and use it to document the access mechanisms that two groups (urban and agricultural water interests) use to constrain or enable access to the basin's water resources under various political, economic and ecological conditions.

Public discourse and news media

The concept of discourse and its various methodological approaches have become an important avenue of inquiry into reframing epistemological questions surrounding the existence of reality, the production of knowledge and the production of space. Discourse refers to both written and spoken communications, signs and symbols encountered as communicative texts, and assemblages of words, practices, institutions and things (Cresswell, 2012). More directly, a discourse is "a specific ensemble of ideas, concepts and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" (Hajer, 1995: 44). Analysis of discourse has materialised as a critique of normative, dominant modes of research in the social sciences ('positivism'). In particular, it aligns with post-structuralism and harbours a social constructionist notion of reality (that is, 'reality' is assumed to be socially produced) (Gill, 2000).

Discursive systems arise around environmental issues on, or related to, the management of natural resources. Dominant environmental discursive systems assert one set of beliefs or truths over other competing discursive narratives. Through these discursive systems, specific relations of power develop that are often produced and reproduced, privileging one set of beliefs or truths over others (Peet and Watts, 2004). In other words, access to resources is often determined by the positionality of an individual, group or community within the wider operations of these systems. Those with access control the allocation of resources to other individuals, groups or communities. Through this process, the knowledge of certain individuals or groups is favoured while other claims are marginalised and excluded. These discourses change over time and are highly influenced by regional history and by both human and physical geography (Bakker, 2003b).

The news media communicates and disseminates information to the public on important local, national and international events via several outlets, including print, television, radio and electronic platforms. News media outlets often document and chronicle prominent environmental issues and resource problems. In doing so, they also capture the environmental discourses surrounding these issues and problems. The information contained in media coverage of environmental and resource issues, and how it is presented, plays an important role in shaping public opinion and informing individual knowledge and perceptions of these issues (McCombs, 2005, 2014). News media coverage "not only can be successful in telling us *what to think about*, but also can be successful in telling us *how to think about it*" (McCombs, 2005: 546; emphasis in original). Media coverage, however, is inherently biased (Entman, 2007). Because of this bias, it is essential to discover the details concerning who and what issues the news media is privileging in order to understand the complex social relationships and power undercurrents at work in environmental issues and resource problems.

Historically, Americans have sourced news updates through a combination of television, radio and print news sources, and this continues to be the case even though paid newspaper subscriptions are declining (Pew Research Center, 2010). Americans also primarily source information on environmental issues and natural disasters through television news stations but look to print and online newspapers for information on local issues (The Media Insight Project, 2014). Exposure to news media generally increases knowledge of the events covered, and the amount of attention an individual gives to a news story influences behavioural choices that are based on the newly acquired knowledge (Slater and Rasinski, 2005). The content of media coverage, including how information is communicated and who delivers it, also influences how the public responds to the information presented (Mondak, 1995; De Vreese and Boomgaarden, 2006; Slater et al., 2007). For scientific topics, the public responds positively to accounts provided by scientists and government officials (McManus, 2000). In other contexts, the public responds equally, or more, to first-hand accounts delivered by non-specialised individuals (Lefevere et al., 2012).

Several studies have documented environmental discourses and changing coverage of environmental issues and resource problems in newspapers in order to understand how news media representation of issues influences people's environmental perceptions of, for example, floods (Escobar and Demeritt, 2014), wildfires (Morehouse and Sonnett, 2010), and drought (Sonnett et al., 2006). These and other studies offer a nuanced interpretation of news media coverage by highlighting trends, changes and differences in regional and national coverage of environmental issues and resource problems. Within the context of recent interest in the water resources literature, this research provides evidence of how, over time, shifting public discourses legitimise the access of urban interests to water (Hommes et al., 2019). It specifically uses news coverage to analyse discourses and counter-discourses that are used by urban and agricultural interests to enable or constrain water access. The primary objective of the research is to determine the key components of access, namely: who is participating, how are water resources being accessed, and what do these trends disclose about the shifting power dynamics between urban and agricultural interests in the Lower Colorado River Valley of Texas.

METHODS

Site and situation

The Colorado River Basin's lower portion encompasses parts of six counties. It begins in Central Texas just north of Austin and extends to the Gulf Coast and exhibits a strong urban-to-agricultural gradient following the river's flow (Figure 1). Central Texas, including Travis and Bastrop counties, has experienced rapid population growth and urban expansion over the past few decades. Between 1990 and 2010, for example, Austin's population almost doubled (Coff and Darling, 2012), and its population growth consistently ranks among the highest in the United States (US Census Bureau, 2012). The valley also harbours an active and substantial agricultural community in its lower reaches. The Texas Rice Belt

generally ranks fourth or fifth in annual US rice production (Baldwin et al., 2011), with Colorado, Wharton and Matagorda counties producing the bulk of the state's rice crop. A host of political, economic, ecological and legal aspects has informed the development and management of the river's water resources.

Texas divides water legally into three media: 1) surface water flowing through a defined channel, 2) groundwater, and 3) overland flow. Groundwater and diffused surface water (for example, rainfall runoff) belong to the landowner. The state owns water flowing in rivers and streams, and state law dictates ownership and rights to this surface water. Civil and common law principles have shaped a long legal tradition governing the rights to surface water in Texas. Surface water law follows two legal traditions: 1) the riparian doctrine and 2) the doctrine of prior appropriation. Under both systems, surface water use is a usufructuary right. Riparian rights allow landowners whose property abuts a riverbank to use or impound 200 acre-feet of water annually for domestic and livestock purposes. Under the doctrine of prior appropriation, water rights are established through a hierarchical system that is based on seniority (those who claimed the water first, that is to say, "first in time, first in right"). All other water users hold junior rights. When water demand outstrips supply, state water authorities may interrupt or cut off junior water rights in favour of senior water rights holders. Finally, water rights holders may sell or lease their rights to others.

The Lower Colorado River Authority (LCRA), which is modelled after the Tennessee Valley Authority, in conjunction with federal and state authorities developed the water resources of the Colorado River between the 1930s and the 1960s under a multipurpose management approach. In 1937, the LCRA oversaw the completion of the first dam and reservoir (Lake Buchanan and Buchanan Dam) on the Colorado River just above Austin. In 1961, the LCRA completed the fifth and last dam. By that time, the LCRA, with funding from the US Congress, had created a chain of five reservoirs known locally as the Highland Lakes. A product of the conservation movement and New Deal spending, the Highland Lakes system was constructed to alleviate flooding in Central Texas, generate hydroelectric power, and provide water for agriculture and municipal needs (Adams, 1990). Lakes Buchanan and Travis function as water storage reservoirs and provide water for municipal, industrial, agricultural and environmental uses throughout the Lower Colorado River Valley. The LCRA manages the lakes together as one system, with a water capacity of 2.47 billion cubic metres (Bm³).

Beginning in the 1960s, the LCRA made a number of significant water rights purchases in the Texas Rice Belt area of the Lower Colorado River Basin. In 1960, it bought the Gulf Coast irrigation district and its water rights from the Gulf Coast Irrigation Company. This district, in Wharton and Matagorda counties, possessed water rights in excess of 0.31 Bm³. The bulk of these water rights have a priority date of 1 December 1900. In 1983 and 1992, the LCRA purchased the Lakeside irrigation district and its water rights, and in 1998, it bought the Garwood irrigation district and its water rights. In 2000, the LCRA purchased Pierce Ranch and its water rights. With this purchase, it secured the last group of privately held senior water rights in the basin and solidified its control over the valley's irrigation districts. By 2011, the LCRA had amassed rights to 63% of the Lower Colorado River Valley's water (Kaiser, 2011), a majority of which are the most senior rights in the basin. In contrast, the next largest water rights holder, the City of Austin, possesses 4.9% of the basin's water.

The accrual of water rights has allowed the LCRA to become the primary water wholesaler in the basin, and the City of Austin has become its primary customer. Water deals with the capital city helped finance the LCRA's accumulation of water rights in the lower basin. In 1987, the City of Austin and the LCRA entered into an agreement for the delivery of water, through 2023, from Lakes Buchanan and Travis (LCRA and the City of Austin, 1999). The 1987 agreement amended a previous agreement from 1966. After the LCRA's purchase of the Garwood water rights, it entered into a new water deal with the City of Austin in 1999. The deal, secured by Austin for US\$100 million, reserved a large amount of water for the city and its future demands even during drought events. In 2007, Austin and the LCRA extended their agreement until 2100 under a formal water partnership (LCRA and the City of Austin, 2007).

The LCRA's water rights purchases and its water delivery contracts with Austin suggest increasing control over the water resources of the Lower Colorado River Valley. These purchases and contracts have led to changes in how urban and agricultural interests acquire water. Agricultural operations enter into interruptible water supply contracts with the LCRA to secure water for irrigation. These agricultural service contracts are based on available supply with curtailment during drought conditions, while urban interests enter into firm water supply contracts that guarantee water delivery even under drought conditions. Current management reserves 0.54 Bm³ for firm water supply contracts and, under normal non-drought conditions, up to 0.34 Bm³ for interruptible water supply contracts (LCRA, 2015b). The LCRA conducts water allocation decisions based on a state-approved water management plan. This plan details when the LCRA may curtail or completely cut off water supply to interruptible water supply customers as well as when conservation measures are to be undertaken by firm supply water users.

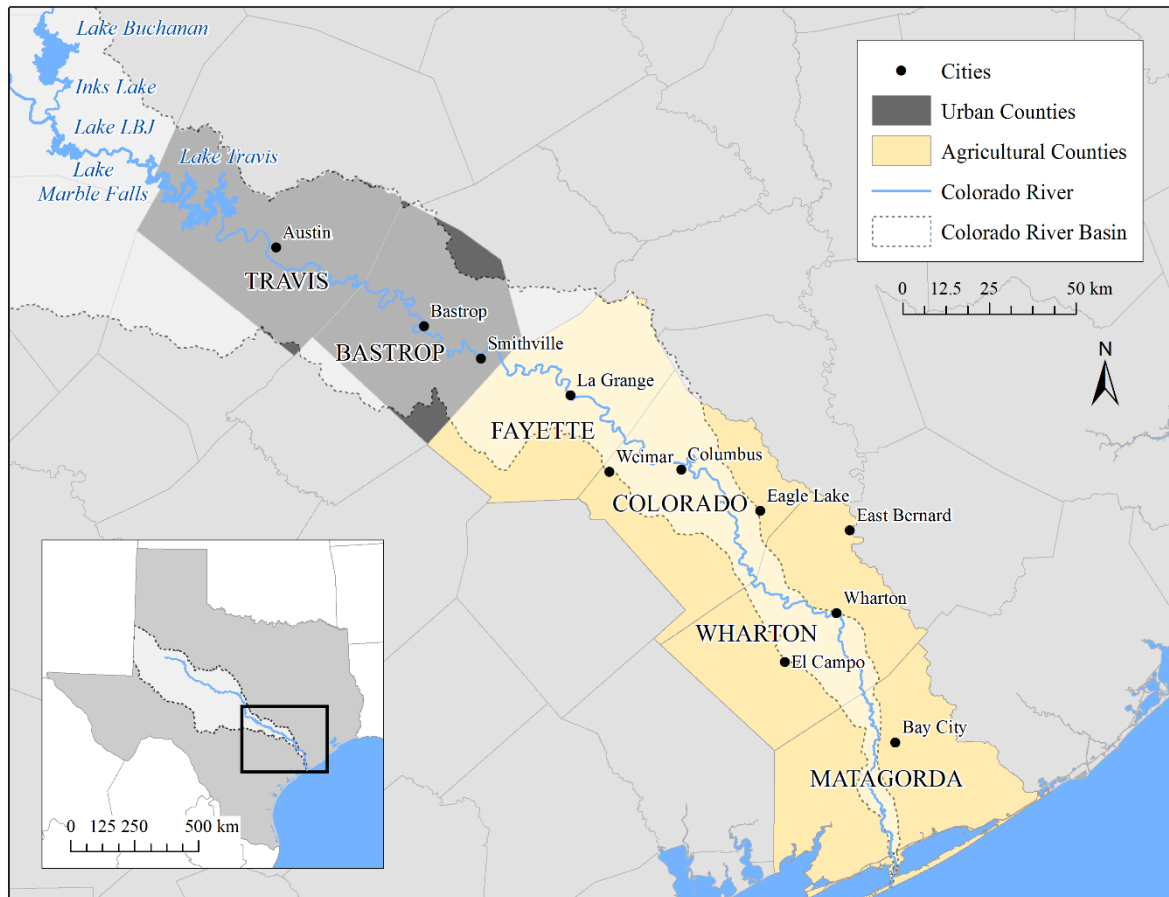
In 1989, the LCRA outlined its first drought management and drought contingency plans with regard to water supply contracts (LCRA, 1989). This plan defined the decision-making process for interruptible and firm water supply contracts based on the combined water storage in Lakes Buchanan and Travis on January 1. It also detailed the conditions under which interruptible water supply would be curtailed or cut-off, as well as the water conservation measures for firm water supply customers. The plan directed customers holding firm water supply contracts to implement voluntary water use reduction measures first and, if conditions worsened, to reduce water consumption by 10 to 20%. The plan also called for a pro rata curtailment according to which firm water supply users would reduce use by 20% if a drought occurred that was worse than the drought of record.

These curtailment and cut-off guidelines for firm and interruptible water supply customers remained unchanged through subsequent revisions to the water management plan in 1991, 1992, 1999 and 2010 (LCRA, 1991, 1992, 1999, 2010). During an extended and intense drought that lasted from 2008 to 2015, combined water storage in Lakes Buchanan and Travis declined significantly, and in 2013, the lakes were only 43% full (AARO, 2015). Because of the drought and ongoing water scarcity in Central Texas, the LCRA filed an emergency order with the TCEQ in 2012 to adjust its water management plan. The order called specifically for the cut-off of interruptible water supply contracts. The TCEQ approved the request. The LCRA filed similar emergency orders in 2013, 2014 and 2015, each of which received TCEQ approval.

Recognising the difficulty and uncertainty of filing annual emergency orders, the LCRA set out to update its water management plan to provide more flexibility to its curtailment procedures. In 2015, the TCEQ approved the LCRA's newest water management plan, which made significant changes to the way it manages interruptible water supply contracts. First, the LCRA moved the date for determining the water available for interruptible water supply contract holders from January 1 to March 1 and added an additional evaluation date of July 1. These dates correspond to the timing of water for first and second rice crops in the Lower Colorado River agricultural operations. On both dates, the LCRA categorises the current water supply condition as either 1) normal, 2) less-severe drought, or 3) extraordinary drought and outlines the curtailment of interruptible water supply contracts based on these conditions. The LCRA also uses a "look ahead test". If the test results indicate that the combined storage of Lakes Buchanan and Travis will drop below certain levels during the year, the LCRA will not release interruptible water under normal or less-severe drought conditions. The 2015 water management plan leaves in place conservation guidelines for firm water supply customers (LCRA, 2015b).

The Lower Colorado River Valley provides an opportune locale in which to examine the evolving relationship between urban and agricultural water interests. It has a long, well-documented history of regional surface water governance, river modifications and infrastructure development, and basin conflict and cooperation, all of which have been shaped by dynamic ecological conditions, economic demand and population growth (Banks and Babcock, 1988; Adams, 1990). Additionally, robust news coverage of water-related issues in both the urban and agricultural portions of the basin provides an opportunity to assess how public discourse between water interests has evolved due to changing political-ecological conditions and how each has tried to secure water access over time.

Figure 1. Map of the Lower Colorado River Valley.



Source: Texas Water Development Board (TWDB) and Texas Department of Transportation (TxDOT).

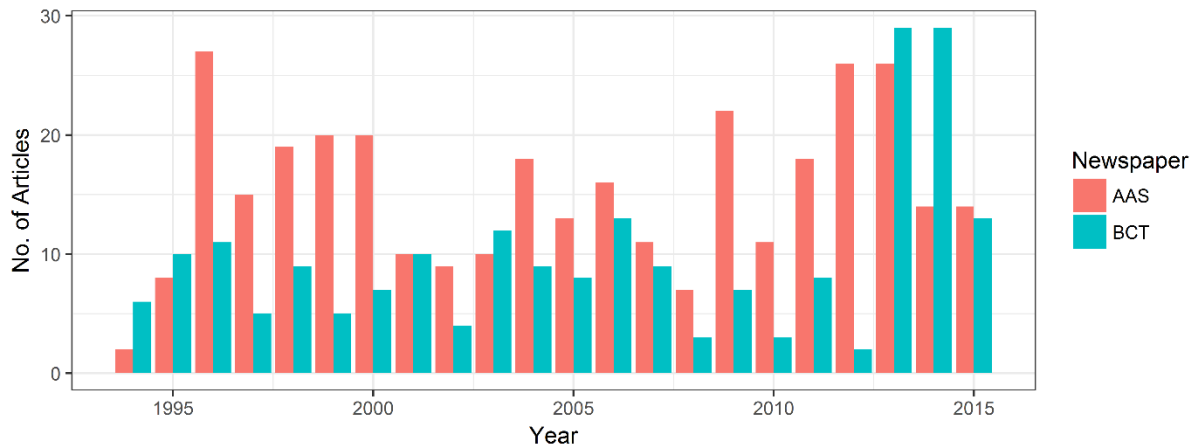
Data

Newspaper articles on water-related issues serve as the primary data source for this research because news coverage of events and issues are a form of public discourse. They supply one of the only continuous, consistent and ubiquitous forms of public sentiment on major local, regional and global issues. Historic and current news media reports are also widely accessible to the researcher and to the public, and newspaper accounts of events offer an important source of discourse that provides clues to the context in which they were produced. Because of this, evaluations of newspaper articles provide a reliable indicator of public perceptions of important issues occurring within a broader context of political, economic and ecological change.

I collected news articles from two newspapers to capture differences between urban and agricultural portions of the study area and to identify access mechanisms deployed by the two interest groups. Articles were selected from the *Austin American-Statesman*, an urban-centric regional newspaper located in Austin, Texas, and the *Bay City Tribune*, a local biweekly newspaper situated in the heart of the study area’s agricultural region. Articles were located through newspaper database searches and microform. Articles from the *Austin American-Statesman* were sourced from LexisNexis® Academic, using a series of targeted keyword and subject searches to return articles covering water issues. LexisNexis® provides full text of the *Austin American-Statesman* daily newspapers beginning in 1994. Search criteria included 'water' or variants of 'irrigation', plus any of the terms (or variants of) 'consumption', 'agriculture', 'rice', 'supply', 'use', or 'lake'. To locate articles in the *Bay City Tribune*, I used NewsBank’s

database and the same search criteria, beginning in 2001. I retrieved articles prior to 2001 from the Bay City Public Library via microform. The final database contained 548 articles spanning from 1994 to 2015, with 336 from the *Austin American-Statesman* and 212 from the *Bay City Tribune* (Figure 2).

Figure 2. Articles by year from the *Austin American-Statesman* and the *Bay City Tribune*.



Analysis

To identify trends and changing patterns in the way access to water resources were presented in newspaper articles, I employed a deductive qualitative content analysis following methods established by Mayring (2000). I specifically analysed what mechanisms were used by urban and agricultural water interests to maintain, acquire or control access to the valley's water resources. I developed a coding structure derived from Ribot and Peluso's (2003) theory of access. I also included other conditions that have the potential to affect water allocation decisions, such as population growth, economic development and climate change (OECD, 2015). Together, these theoretical and conceptual frameworks provided the thematic organisation for coding news media discourses relative to water resources and access mechanisms. Five themes were identified and coded: 1) the primary theme of each article and associated cause(s); 2) the water interests that were present in each article; 3) the mechanisms of access that were described in each article; 4) the climate-related factors mentioned in each article; and 5) the source(s) attached to water-related claims.

The coding of article text advanced in two stages. The complete newspaper article comprised the first unit of analysis. I identified a primary theme for each article, for example cooperation, competition or both and noted if any implied cause(s) of water-related issues were given, such as population growth, economic development or ecological conditions. If multiple implied causes appeared in an article, each mention was coded in combination. The second stage of analysis provided more detail and took the paragraph as the unit of analysis. Paragraphs were coded to identify mechanisms of access, water interests, water governance actions and proposals, their sources, and climate-related factors. Access mechanisms refer to the way(s) in which a water interest group or community controls, maintains or gains access to the valley's water resources. These mechanisms were categorised into rights-based access mechanisms and structural and relational access mechanisms (Ribot and Peluso, 2003). Water interests were identified and characterised according to their primary objectives (for example, urban, agricultural, industrial and ecological). I also identified who was commenting on water-related issues and their primary role in water resource matters (for example, government official, water manager, urban resident and farmer). I noted if specific water governance actions and proposals, including references to water management strategies, decisions or policies, were discussed. Finally, I documented climate-related

characteristics including reporting on issues of water quantity with reference to weather phenomena (for example, droughts and floods) and lake level conditions.

The coding framework allowed me to identify the primary mechanisms urban and agricultural interests and their surrogates used to enable or constrain water access in response to underlying political, economic and ecological conditions and to document how they changed over time. I used the qualitative data analysis software ATLAS.ti for Mac version 1.5.3 (2017) to code news articles. In order to increase the reliability and validity of the study, my interpretation of the findings were triangulated with documented water governance actions and proposals, including legislation proposed or passed, other important water development and allocation decisions made, and major water rights holdings and acquisitions undertaken via sale, trade or lease.

FINDINGS

Public discourses on water-related issues in the Lower Colorado River Valley found in the *Austin American-Statesman* and the *Bay City Tribune* show a highly dynamic relationship among urban and agricultural water interests. The discourses reflect increasing urban control over the valley's water supply and are informed by a series of political, economic and ecological events. Findings are organised into three periods of public discourse which are centred on access mechanisms that facilitated either water resource cooperation, fragmentation or control (Table 1). These public discursive moments relate to the distribution and competition for water among urban and agricultural interests. The public narratives for each period are developed below, beginning with a synopsis of the underlying political-ecological conditions present during the period and followed by a detailed presentation of the major story lines within both newspapers. Finally, I present the discourses used to either constrain or enable water access. Taken together, I describe 1) the discourses used by water interests to derive benefits from the basin's water resources; 2) the way in which political, economic and ecological events influenced those discourses; 3) the dominant discourses that emerged in each period; 4) the way these discourses evolved and transformed over space and time; and 5) how they, in turn, reflect changes in water distribution in the Lower Colorado River Valley.

Cooperation (1994-1999)

The first period of discourse occurred between 1994 and 1999 under a unique set of political-ecological conditions. Through several proposals, endorsed by state and regional actors, outside water interests attempted to acquire water resources from the Lower Colorado River Basin, and public discourse revolved around these actions. Both urban and agricultural interests in the basin cooperated to maintain control of the valley's water and, at the same time, an emerging drought forced basin water interests to initiate conservation measures.

In the *Austin American-Statesman*, news articles ($n = 26$) covered the increasing interest from outside actors who were in search of ways to access the basin's water resources. In the *Bay City Tribune*, news articles ($n = 32$) covered this issue from an agricultural perspective. The main storyline for each paper focused on the proposed plans of several state agencies and regional groups who were vying for a stake in the basin's water resources and the responses from local stakeholders and municipalities. A drought in 1996 also received coverage in both newspapers. The salient issues covered within this period included a proposal for an interbasin water transfer to satiate growing urban water demands outside of the basin (Trans-Texas Water Program, 1994), the purchase and interbasin transfer of Colorado River water to an outside municipality, and a drought in 1996 that resulted in widespread agricultural losses (WGA, 1996; Hayes et al., 1999). Consequently, outside water interests and an emerging, acute, but short-lived drought threatened the basin's water resources. Public discourses found in both newspapers responded to these events, and there was evidence of an emerging and united effort between urban and agricultural interests to defend and maintain their shares of the basin's water.

Table 1. Periods of discourse, as identified through a qualitative content analysis of newspaper articles, organised by overriding political-ecological conditions and primary mechanisms affecting water access.

	Cooperation (1994-1999)	Fragmentation (1999-2007)	Control (2007-2015)
Political-ecological conditions	Drought Outside pressure for water resources	Water management issues	Drought Water management issues
Urban access mechanisms	Use of authority figures Social relations with agricultural water interests Knowledge claims Conservation strategies	Use of financial capital Social relations with the regional water authority	Use of authority figures Social relations with the regional water authority
Agricultural access mechanisms	Use of authority figures Social relations with urban water interests Challenges to knowledge claims	Challenges to knowledge claims Market access and economic arguments	Market access and economic arguments Social relations with environmental organisations

A common and recurrent theme centred on local stakeholders and municipalities from within the valley speaking out against proposals for interbasin water transfers. These voices firmly and uniformly decried external efforts to access basin water resources. Elected officials, water interest representatives and water authorities stated their disapproval of interbasin water transfers. A local Travis County judge, for example, explained in the *Austin American-Statesman*, "[i]t's an awful idea. San Antonio has sucked its aquifer dry, its voters won't support a new reservoir and now the state wants to give them our water? It's outrageous" (Wright, 1994: para. 3). Opposition narratives were not limited to judges. Local community groups and associations formed to oppose the proposals. An association representative noted, "[n]o one wants to see anyone die of thirst. But the problem is, you don't take water away from someone else who needs it" (ibid: para. 16). The LCRA also fought back against the proposals, with its general manager reinforcing these comments based on LCRA's estimates of available water in the basin. He suggested, "there is no water to spare [in the Lower Colorado River Basin]" (ibid: para. 19). Austin's mayor was less restrained in his comments on the various proposals, stating that outside interests should, "[k]eep their hands off. That kind of policy is inherently unfair to all the people who choose to live and work up and down the Colorado river" (Haurwitz, 1995: para. 9). The proposals made the front page of the *Bay City Tribune* as well. In an early edition of the paper, an LCRA spokesperson commented,

[w]hen you're talking about diverting water for a tourist attraction like Sea World or pumping water into the San Antonio River for the Riverwalk, I think you would have to contend that most river authorities would want to see a very serious conservation program in place (Clamon, 1994: para. 11).

These examples illustrate the ability of both urban and agricultural water interests to engage authority figures to help maintain access to the basin's water while at the same time constraining external water interests. Their voices in the public discourse convey the importance of keeping water within the Lower Colorado River Basin while signifying their influence on matters related to who gets to benefit from the

basin's water supply. These examples also indicate an alignment of water interests in the basin whereby both urban and agricultural water interests were defended. In other words, urban and agricultural basin water interests operated as one unit to deter and constrain outside encroachment.

Another theme emerged around existing social relationships between urban and agricultural water interests in the basin that highlighted the river's importance to their unique but shared social identities. The ongoing discourse suggested basin water interests were united in opposition to outside encroachment and, taken together, illustrated an even further alignment of basin interests with the aim of constraining outsiders from accessing, and benefiting from, the valley's water resources. Evidence of basin alignment was frequent in the *Austin American-Statesman* as opponents to interbasin transfers became more vocal. Within these comments, both urban-oriented water interests – including recreational interests – and agricultural interests operated as one system, defending each other's water supply. One article asserted, "[o]pponents say piping water from the [Highland Lakes] to San Antonio would hurt the area's tourism and recreation-based economy" (Wright, 1996: para. 28). Members of the Highland Lakes Association also recognised the importance of the Highland Lakes for supplying irrigation water to agricultural interests while voicing their opposition to the interbasin transfer proposals. In a *Bay City Tribune* article, an association member noted, "[t]he irrigation rights are senior priorities for the [LRCA]. It's been this way since before the dams were built. That's just a fact of life for people in Lake Travis. We've just learned to live with it" (Breeding, 1996: para. 12). Despite the uneven tone, this statement reflects the status quo of how the Highland Lakes system functions and, more broadly, the legalities of water rights in Texas. It also recognizes the hierarchical structure of water allocation in the basin and that, more importantly, basin interests, whether urban, industrial or agricultural, come first. The LCRA general manager also reinforced this position when he singled out the basin's agricultural interests, saying, "the agency [LCRA] would oppose a withdrawal of 75,000 acre-feet because it would devastate rice farmers in Matagorda and Colorado counties, along the Gulf of Mexico" (Haurwitz, 1995: para. 4).

Lower Colorado River water interests also aligned in opposition to the purchase of water rights from an outside municipality and the subsequent interbasin transfer. At the time, Austin's mayor, quoted in the *Austin American-Statesman*, said of the proposed purchase and water transfer, "[i]t's more than just the nose of the camel under the tent. It's bad policy, and we oppose it. It affects not only Austin but the communities all around Austin. It is our drinking water" (Dworin, 1996: para. 6). The LCRA also voiced its opposition to the purchase. Their water resources planner said, "[t]he biggest impact will be for the people who are downstream (...). We're already in short supply in the basin, and taking more water out would only make it worse" (ibid: para. 18).

When the drought of 1996 began, it served to catalyse water interests in the basin even further. Water interests formed associations across the basin, bolstering social relations even more, but this did not necessarily bring together urban and agricultural interests. Upper basin municipalities formed an Alliance of Cities that was composed of Central Texas elected officials. This alliance considered pursuing legislation to limit interbasin transfers to ensure water would stay within the basin of origin (ibid). Agricultural counties also joined forces. A coalition of county governments from the agricultural areas of the Lower Colorado River Basin formed to combat the interbasin transfer proposals (Hart, 1995; Gonzales, 1996). Together basin interests at both ends of the Lower Colorado River cooperated to protect the valley's water resources from external threats.

Fragmentation (1999-2007)

Public discourse of water issues in the Lower Colorado River Basin began to shift in 1999 under a backdrop of increased competing demands on the basin's limited supplies. Travis County had added an additional 200,000 residents (Coff and Darling, 2012), and the LCRA had accumulated a majority of the basin's water rights. From 1999 to 2007, news articles ($n = 89$) in the *Austin American-Statesman* focused on the

delivery of water to new urban developments in the northwest portion of Travis County and two significant water deals between Austin and the LCRA. The *Bay City Tribune* published news articles ($n = 66$) reporting on ongoing management efforts and policy proposals to secure freshwater inflows for the Matagorda Bay estuarine system. Both newspapers reported on the LCRA's purchases of water rights and on other large water deals in the basin. The primary theme in both newspapers reflects the LCRA's growing involvement in issues regarding the distribution and management of the basin's water supply. Analysis of public discourse also reveals a developing fracture between urban and agricultural water interests. Findings suggest that urban and agricultural water interests were no longer aligned in opposition to outside interests as the threat had dissipated. Instead, urban and agricultural interests focused individually on constraining the LCRA's water management decisions or on improving their positions within the larger water supply hierarchy that was taking shape. The narratives that appear are characterised by competition between water interests for control of the basin's water resources and, consequently, signify an important shift not only in the consumption of water but in the control of the basin's water resources. Analysis of the public discourse exposes mechanisms that are used to maintain or control water resources situated around capital, social relations, and knowledge and information.

During this period, a series of water rights purchases allowed the LCRA to significantly increase its water rights holdings in the basin. It also entered into two significant water contracts with the City of Austin. Public discourse focused on these purchases and contracts, along with the benefits they created. In 1998, the LCRA purchased the water rights to 164 Mm³ (million cubic meters) from the Garwood irrigation district for US\$75 million. At the time, the purchase was the largest sum ever paid for a group of water rights in Texas history. With this purchase, the LCRA tripled its water reserves, and in the *Austin American-Statesman*, its manager stated, "[w]ater will not be a restriction to population and industrial growth in the 21st century, even during a repeat of the worst drought on record" (Haurwitz, 1998: para. 3). News coverage also included state officials lauding the purchase, as well as agricultural interests welcoming the water rights acquisition. The LCRA increased its water rights holdings again in 2000. It purchased from Pierce Ranch the water rights to an additional 67.8 Mm³ for US\$17 million. In the *Austin American-Statesman*, the LCRA's general manager remarked that the deal was "a very important piece, and the last piece, in the whole puzzle" (Haurwitz, 2000: para. 3), and an executive manager stated, "[t]his is a long-term investment" (ibid: para 16). Indeed, these rights were the last large group of privately held water rights in the basin, and through their purchase, the LCRA acquired a majority of the basin's water rights (Kaiser, 2011). Agricultural interests in the *Bay City Tribune* also touted the purchase as "a landmark deal for the LCRA, the state's water-planning efforts, and for Matagorda County" (Bagent, 2000: para. 2).

The LCRA and Austin entered into a 50-year water supply contract for US\$100 million in 1999. The contract ensured the delivery of water to the city until 2050. It also provided the LCRA with the funds needed to purchase the water rights described above. City officials applauded the deal in the *Austin American-Statesman*. One Austin city council member remarked, "[w]hat we are buying here is not just water. What we are buying is control over our destiny" (Lindell, 1999: para. 15). The LCRA also brokered several other deals and contracts with surrounding Central Texas municipalities to deliver water to growing peri-urban developments. Finally, in 2007, the LCRA and Austin entered into another significant contract. The deal established a water partnership between Austin and the LCRA, which ensured Austin's water supply until 2100. Through this partnership, the LCRA and Austin together controlled most of the water in the basin. It also signalled a maturing relationship between the two entities. An Austin official, speaking in the *Austin American-Statesman*, noted, "[t]he idea [behind the partnership] was that we would solve our problems locally. It's cutting edge for the city and the LCRA to do something as collaborative as this" (Price, 2007: para. 24). The flow of capital through the valley allowed the LCRA to amass a significant amount of the basin's water rights and assume control over water supply in the basin, and its partnership with Austin in 2007 was viewed as solidifying its position atop the water supply hierarchy. Reflecting on the LCRA-Austin deal, one former LCRA board member expressed this sentiment by saying, "[i]f water is the new oil, [the] LCRA is chief of the emirates" (ibid: para. 17).

As news coverage chronicled the LCRA's movement to shore up control of the basin's water resources through its water rights purchases and water contracts, the public discourse revealed that both urban and agricultural interests were also exploring ways to maintain or acquire water resources on their own. In doing so, both interests brushed up against the increasing power of the LCRA while displeasing other water interests. The City of Austin explored options for securing water, which ranged from buying land and developing groundwater supplies in surrounding counties to reclaiming and reusing its wastewater. In 2002, Austin filed an application with the TCEQ to reclaim and reuse its wastewater. The LCRA general manager contested Austin's request in the *Austin American-Statesman* by stating, "[t]his is not just an Austin issue. It's a huge change. It will have huge impacts on those who have relied on the status quo" (Scheibal, 2002: para. 24). Rice farmers reacted similarly to Austin's request for indirect use of its wastewater in the *Bay City Tribune*. Agricultural interests felt that Austin's reclamation would lower flows to agricultural counties during the year. One agricultural county water representative stated, "[w]e're very concerned that anything that could take water out of the natural flow of the river could certainly be detrimental from an irrigation standpoint" (Smith, 2004: para. 8).

At the opposite end of the valley, an additional recurring narrative specific to agricultural interests appeared in the *Bay City Tribune*. Representatives of agricultural interests interrogated the LCRA over environmental inflow estimates included in its draft water management plan and were concerned that environmental inflows would siphon water from irrigation operations. They insisted that the LCRA complete more studies before making a final determination. An agricultural interest explained his opposition, saying,

[w]hile adequate freshwater inflow needs (FIN) must be accommodated. There is a serious question of the adequacy of the presented data as it is used in forming a conclusion. Since we are confronted with allocating a limited resource whose misappropriation to FIN would result in serious economic losses to irrigation interests, we must have adequate proof of need. If an allocation is made that will deprive irrigators of water for crops, the effect will be immediate and highly predictable, but due to limited data we may not know for some time if we have benefited [Matagorda] Bay (McClanahan, 2001b: para. 7-8).

He added, "[w]e really don't know the actual requirement of bays and estuaries, but we do know the consequences of less water for rice" (McClanahan, 2001a: para. 5). Agricultural water interests managed to persuade the LCRA to conduct a long-range FIN study by appealing to both the economic interests of the lower basin and questioning the knowledge produced through the LCRA's studies.

Within this period, public discourse at both ends of the basin reacted to the LCRA increasing its water rights holdings, its growing water contracts, and its water management plans. Urban interests maintained and acquired significant amounts of water by entering into a water contract with the LCRA and, finally, by formally partnering with the river authority. Agricultural interests, however, attempted to maintain access to their share of the water by challenging the LCRA's FIN studies and reacting to Austin's indirect use plan. Overall, both urban and agricultural interests successfully retained access to their portions of the basin's water supply. Social relations, however, shifted in telling ways. Public discourse shows that agricultural interests were increasingly called on to defend their interests in the basin, whereas urban interests seemed to benefit from their growing relationship with the LCRA.

Urban control (2007-2015)

Public discourse shifted yet again in 2007 after the Austin-LCRA partnership agreement and as the area began to experience a severe drought. Discourse within this period is characterised by an increasing internal competition for the basin's water resources during a period of severe water scarcity. In the *Austin American-Statesman*, news articles ($n = 81$) concentrated primarily on the growing tensions between urban and agricultural water users and described local water restrictions and conservation efforts during the drought. News articles in the *Bay City Tribune* ($n = 78$) reported on the various strategies mounted by agricultural counties to maintain access to their share of the basin's water resources. Public discourse

during this period reflected increasing competition between urban and agricultural interests for the basin's water resources.

In 2008, an extended and significant drought spread across the state (Nielsen-Gammon, 2011; Combs, 2012). Precipitation in early 2010 initially eased drought concerns; however, in the period immediately following, several records fell. In 2011, the months of March through May and June through August produced record low precipitation totals. Similarly, the 12-month rainfall total for October 2010 through September 2011 fell below the previous record low that was set during Texas's drought of record in the 1950s. Across the state, average summer temperatures beat previous records (Nielsen-Gammon, 2011). The drought diminished water stored in the Highland Lakes. Inflows into Lakes Buchanan and Travis between March 2008 and October 2014 were 43% lower than during the 1950s drought (AARO, 2015). The drought lasted until 2015, and in February of that year, the LCRA concluded that the drought was the worst on record (LCRA, 2015a).

In the Lower Colorado River Valley, water scarcity created by the drought increased competition for the basin's water resources and divided the basin's water interests. In 2011, the LCRA fulfilled interruptible water supply contracts despite the ongoing drought and the protests of urban interests. In 2012, 2013, 2014 and 2015, as the drought worsened and urban interests exerted increasing political pressure, the LCRA issued a series of emergency orders that cut off irrigation water to agricultural counties. Urban counties lobbied in favour of the cut-offs, and the cut-offs, in turn, angered agricultural interests.

Against this backdrop, the public discourses of urban and agricultural water interests differed, and the mechanisms each used to maintain their water supplies suggested a broad shift in control of the valley's water. Urban water interests, led by Austin, acquired the ability to control and dictate water distribution throughout the basin. Urban interests were able to bolster their claims through the backing of authority figures. Agricultural interests, however, remained on the defensive. They attempted to maintain water access by emphasizing their long history as an agricultural community and by forming relationships with environmental organisations. They also raised concerns about the potential economic impacts of the ongoing water cut-offs.

In the *Austin American-Statesman*, authority figures defended urban water interests. In particular, two state legislators, who were serving the residents and businesses in portions of Travis County, protected urban water interests. Threatening the LCRA with legislation to limit its authority in water matters, the legislators opposed the river authority's initial recommendation to release water to its agricultural customers during the drought in 2012. The legislators suggested that if the LCRA released water for irrigation operations downstream, the release would create the worst drought on record and would not leave enough water to meet its firm water supply commitments to urban communities. They vowed to fight the LCRA's initial recommendation to release water to rice farmers. To emphasise the seriousness of their threats, one of the legislators commented, "[w]e are ready to go to the mat on this" (Toohey and Price, 2012: para. 2). Moreover, in a letter written to the LCRA, with portions published in the *Austin American-Statesman* and the *Bay City Tribune*, the legislators said they would "pursue legislation that prohibits such decisions in the future and would actively support court action to stop the river authority" (ibid: para. 3). The legislators also publicly labelled the LCRA's decision as "irresponsible", and Austin's mayor added that the decision was "inconceivable" (ibid: para. 26). The legislators' efforts seemed to be effective. The LCRA, with the approval of the TCEQ, cut off water to irrigation operations in 2012.

The legislators continued to put pressure on the LCRA the following year while voicing their concerns and discussing their proposed policies in both newspapers. They filed a bill in 2013, requiring that the "supply of interruptible water must be cut off entirely before the [LCRA] curtails supplies of firm water or requests that firm water customers institute voluntary drought contingency measures" (Halvorson, 2013d: para. 3). The proposed legislation made it out of committee but did not receive a reading in the

legislature. The LCRA, however, pursued emergency orders to cut off water to agricultural interests in 2013, 2014 and 2015, and the TCEQ approved the orders each year. As a result, during those years the LCRA did not release water from the Highland Lakes system to downstream interruptible water supply customers.

Down river, agricultural interests – their water security under pressure from urban interests and the drought – deployed an array of mechanisms to maintain their share of the basin’s water resources. In an attempt to unseat urban interests and combat the emergency orders, agricultural interests formed a number of new social ties. News articles in the *Austin American-Statesman* and the *Bay City Tribune* recorded their growing connections with environmental organisations in an effort to maintain access to the basin’s water resources. At the time, environmental organisations were particularly concerned with the impact of continuous water cut-offs on the coast’s migratory waterfowl population. Many migratory waterfowl species rely on wetlands created by rice farming operations for their winter habitat. Environmentalists were also concerned about the Matagorda Bay estuarine system and the aquatic wildlife there that was dependent on freshwater inflows. Based on their similar concerns, agricultural interests and environmental groups began to work together to lobby for water releases in 2012, 2013, 2014 and 2015. Agricultural interests joined national environmental organisations, including Ducks Unlimited, the Sierra Club and the National Wildlife Federation, to decry the LCRA’s cut-off decisions. News articles also reported that rice farmers formed alliances with local school districts, hunting and fishing guides, birding groups, and nature tourism businesses (Price, 2014). Expressing his concern over the 2012 decision, a biologist from Ducks Unlimited stated,

[w]ater is part of the foundation for the basin-wide regional economy, and the fact is there is not enough water at present for all uses and users. However, it is unconscionable to cut off water for food production – which in turn provides vital habitat for millions of migratory birds and supports a multi-million-dollar, natural-resource-based economy – while allowing non-essential uses such as lawn watering, car washing and filling swimming pools to continue. We are all in this together, and we must all conserve our limited resources and seek sensible compromises in water allocation. Without unprecedented winter rainfall, this decision will cut off water for rice farming within the LCRA irrigation districts for the third year in a row (Halvorson, 2013b: para. 4).

Agricultural interests also tried to revive relationships with urban interests, appealing to a shared concern for the basin’s water supply. They stressed the equitable distribution of the basin’s water supplies within its historic precedent. One agricultural interest remarked,

[s]ince the beginning, the lower counties have advocated the entire basin sharing the suffering from the drought. But everyone below the dams in Austin is taking the brunt. No one else is sacrificing. But we are being forced to give up agriculture production, environmental concerns and our rural economy to accommodate their needs. Where is the shared sacrifice? It’s just not there (Halvorson, 2014: para. 10).

Reporting in the *Bay City Tribune* also captured the agricultural community’s argument that by limiting water supplies to downstream farmers through the emergency orders, the LCRA’s actions limited farmers’ livelihoods. In other words, without water, agricultural water interests were denied access to markets. Public discourse suggested that this limitation not only impaired farmers economically, it also harmed an entire community that was built primarily around rice production. In their efforts to maintain water access, agricultural interests repeatedly brought up their concerns about the impact of water curtailments on not just farmers livelihoods but the local economies. An agricultural interest stated, "the rice industry and the communities, businesses, church, charities and local governments that have already suffered through one year without water that plays such a big part in circulating dollars through their budget" (Halvorson, 2013e: para. 9). Another added,

[i]t will change the county. Irrigated cropland changes the tax base. You have to place a lower value on farmland if it is not producing an irrigated crop like rice, which is about the only irrigated crop grown here.

And that's going to mean less tax revenue. We need to get some water from the LCRA or we're going to lose our agriculture infrastructure. We're already starting to lose some of the other businesses that are tied to rice farming (Halvorson, 2013a: para. 7-8).

As the above quotes suggest, the economic consequences of the ongoing water shortage weighed heavily on the minds of rice farmers and on the basin's agricultural communities in general. Within public discourse, agricultural interests continued to stress the important and vital role that water plays in sustaining their local economies along with its environmental services as mechanisms for maintaining water supplies. Both environmental and economic arguments, however, were unsuccessful. Emergency orders continued and water was cut off to downstream agricultural communities during the drought.

As a result of the drought and accompanying emergency orders, the LCRA produced a new water management plan in 2015, as described above. It put in place a more stringent allocation system for meeting interruptible water supply contracts while preserving more water in the Highland Lakes to meet firm water contracts. The LCRA also raised rates for interruptible water supply customers. Observing the water allocation decisions made during the drought, a local water resources expert commenting in the *Austin American-Statesman* said, "[w]e're moving toward an allocation system, which I call 'Big dogs eat first'. We haven't given any water downstream on the Colorado over the last three years. The feeling is 'We're bigger than you, so we're going to take the water'" (Price, 2014: para. 13). Agricultural interests felt the tide shifting as well. An agricultural water representative was quoted in the *Bay City Tribune* saying, "Matagorda County farmers have contended with forces of nature for more than 100 years and have prevailed, only to be assaulted by human fiat, a stroke of the pen that may destroy what nature's worst could not do" (Halvorson, 2013c: para. 10).

CONCLUSIONS

The primary goal of this research was to use public discourse, as captured in news media, to analyse the evolving relationship between urban and agricultural water interests. It specifically analysed newspaper coverage of water-related events over two decades, with the aim of locating and describing the mechanisms used by urban and agricultural interests to enable or constrain water access. In doing so, I identified three distinct periods of public discourse. The findings provide a representation of how access to the benefits of the basin's water resources has changed over time and how various political, economic and ecological conditions have influenced the mechanisms used by urban and agricultural water interests to access the waters of the Lower Colorado River. Over a period of cooperation characterised by drought and external pressure, basin interests aligned to restrict access to the valley's water resources from outside interests. Urban and agricultural access mechanisms included appeals from authority figures, questioning of state recommendations, and cooperating with one another. In the following period, cooperation among urban and agricultural interests began to decline. An examination of the public discourse reveals the extent to which urban interests were able to maintain water access by means of financial capital and their growing relationship with the LCRA. Agricultural interests defended their water share by questioning others' knowledge claims, in particular those of LCRA inflow studies. As the basin entered the 2008 to 2015 drought, access mechanisms shifted as both urban and agricultural interests sought to maintain their supplies under increasing competition for the valley's scarce water resources. Urban interests relied on the backing of authority figures to constrain agricultural water use, while agricultural interests formed relationships with environmental organisations and used economic and identity arguments in an attempt to maintain their water share.

In this way, public discourse detailed the expansion of Austin's urban hydraulic reach in the Lower Colorado River Valley, showing how its waters have gradually been brought into the service of urban uses. From this, a new waterscape has emerged in the Lower Colorado River Valley. It reflects the rise of urban interests and the decline of agricultural interests, inverting the historical hierarchy of water distribution and access in the valley. The shift from agricultural to urban has magnified the standing of

water in the basin and its importance to the many water interests from the Highland Lakes to Matagorda Bay. A meeting of the LCRA board of directors was held in 2012 to discuss future water curtailments. At this meeting, which was held in the upper portion of the basin, the agriculture-to-urban shift was made clear. As stated by a meeting attendee, "[o]nly about a dozen or so (attended) from our lower counties [including Colorado, Wharton and Matagorda counties] (...) about 25 (speaking against [agricultural] interests) to one (representing the [agricultural] interests)" (Staff Reports, 2012: para. 10), and "[f]rom the statements made, if the LCRA (board of directors) had responded on the basis of numbers, there would not be any irrigation water for 2013, or indeed ever!" (ibid: para. 11). These statements reflect the erosion of the long-standing urban-agricultural (city-hinterland) relationship in the basin. As illustrated by the public discourses revealed in news articles, the social and economic links between upstream (urban) and downstream (agricultural) interests have weakened.

Based on these findings, water practitioners should be more aware of how broader political, economic and ecological events become amplified in public discourse and shape perceptions of water access among various interests. Attention should be given to the development of strategies that facilitate a return to a cooperative atmosphere among the valley's water interests. Perhaps ongoing partnerships between agricultural and environmental interests will enhance cooperation among all water interests. Important questions remain, however, which warrant further research. These questions include: 1) how have farmers coped with recurrent water shortages; 2) how have agricultural communities responded to economic losses; and 3) how effective are agricultural-environmental partnerships in securing water resources. On the other end of the spectrum, urban-centric questions also surface: 1) how have urban interests adjusted to the new waterscape; 2) who has benefited most from the shift in water resources; and 3) how has this fuelled further urban expansion and economic growth. With the knowledge gained from answering those questions, water managers and controlling interests might be able to adapt their management decisions and plans to better address the concerns of all water users.

Finally, newspaper coverage of water-related issues offers a consistent, regular and reliable source of information about public discourse. Despite the bias that exists in the coverage of news events – what events are deemed newsworthy and how they are reported – the public discourse described here expanded our understanding of water access and provided an example of how water has been reallocated from agricultural to urban uses in a semi-arid, rapidly urbanising watershed that is subject to recurring droughts. Other records of public discourse, such as those disseminated by government agencies, water management institutions and other water-related organisations, also possess their own biases and should be explored with equal vigour in an effort to further describe how their discursive streams contribute to our understanding of water access and control.

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REFERENCES

- AARO (Austin Area Research Organization). 2015. *Drowning in the central Texas drought*. Austin, TX: Austin Area Research Organization.
- Adams, J.A. 1990. *Damming the Colorado: The rise of the Lower Colorado River Authority 1933-1939*. College Station, TX: Texas A&M University Press.
- ATLAS.ti. 2017. ATLAS.ti for Mac, version 1.5.3, Scientific Software Development, Berlin, Germany.
- Bagent, J. 2000. LCRA, Pierce Ranch deal good news for county. *The Bay City Tribune*. 27 January 2000.
- Bakker, K. 2000. Privatizing water, producing scarcity: The Yorkshire drought of 1995. *Economic Geography* 76(1): 4-27.

- Bakker, K. 2003a. Archipelagos and networks: Urbanization and water privatization in the South. *The Geographical Journal* 169(4): 328-341.
- Bakker, K. 2003b. A political ecology of water privatization. *Studies in Political Economy* 70: 35-58.
- Baldwin, K.; Dohman, E.; Childs, N. and Foreman, L. 2011. Consolidation and structural change in the US rice sector. US Department of Agriculture Economic Research Service RCS-11d-01. April 2011.
- Banks, J.H.J. and Babcock, J.E. 1988. *Corralling the Colorado: The first fifty years of the Lower Colorado River Authority*. Austin, TX: Eakin Press.
- Beckner, S.; Jepson, W.; Brannstrom, C. and Tracy, J. 2019. 'The San Antonio River doesn't start in San Antonio, it now starts in Bureson County': Stakeholder perspectives on a groundwater transfer project in central Texas. *Society & Natural Resources* 32(11): 1222-1238.
- Bell, M.G. 2015. Historical political ecology of water: Access to municipal drinking water in colonial Lima, Peru (1578-1700). *The Professional Geographer* 67(4): 504-526.
- Birkenholtz, T. 2016. Dispossessing irrigators: Water grabbing, supply-side growth and farmer resistance in India. *Geoforum* 69: 94-105.
- Breeding, C. 1996. Dry areas look to Highland Lakes to ease water woes. *The Bay City Tribune*. 1 August 1996.
- Celio, M. and Giordano, M. 2007. Agriculture-urban water transfers: A case study of Hyderabad, South-India. *Paddy and Water Environment* 5(4): 229-237.
- Celio, M.; Scott, C.A. and Giordano, M. 2010. Urban-agricultural water appropriation: The Hyderabad, India case. *The Geographical Journal* 176(1): 39-57.
- Clamon, R. 1994. LCRA not happy with a plan to divert river water. *The Bay City Tribune*. 12 July 1994.
- Coff, R. and Darling, K. 2012. Travis county trend profile: Selected census data from 1990, 2000, and 2010. Austin, TX: Travis County.
- Combs, S. 2012. The impact of the 2011 drought and beyond. Texas Comptroller 96-1704.
- Cresswell, T. 2012. *Geographic thought: A critical introduction*. Somerset: Wiley.
- De Vreese, C.H. and Boomgaarden, H. 2006. News, political knowledge and participation: The differential effects of news media exposure on political knowledge and participation. *Acta Politica* 41(4): 317-341.
- Dworin, D. 1996. Water wars loom in plan to tap river; Corpus Christi to seek state approval to pump from river. *The Austin American-Statesman*. 18 September 1996.
- Entman, R.M. 2007. Framing bias: Media in the distribution of power. *Journal of communication* 57(1): 163-173.
- Escobar, M.P. and Demeritt, D. 2014. Flooding and the framing of risk in British broadsheets, 1985-2010. *Public Understanding of Science* 23(4): 454-71.
- Garrick, D.; De Stefano, L.; Yu, W.; Jorgensen, I.; O'Donnell, E.; Turley, L.; Aguilar-Barajas, I.; Dai, X.; de Souza Leão, R.; Punjabi, B. and Schreiner, B. 2019. Rural water for thirsty cities: A systematic review of water reallocation from rural to urban regions. *Environmental Research Letters* 14(4): 043003.
- Gill, R. 2000. Discourse analysis. In Bauer, M.W. and Gaskell, G. (Eds), *Qualitative researching with text, image, and sound: A practical handbook*, pp. 172-190. Thousand Oaks, CA: Sage Publications.
- Gonzales, L. 1996. Bay City council votes to join counties coalition on water. *The Bay City Tribune*. 22 November 1996.
- Hajer, M. 1995. *The politics of environmental discourse: Ecological modernisation and the policy process*. Oxford: Clarendon Press.
- Halvorson, B. 2013a. Drought puts rice farms in danger. *The Bay City Tribune*. 7 August 2013.
- Halvorson, B. 2013b. Groups oppose water cutoff. *The Bay City Tribune*. 27 November 2013.
- Halvorson, B. 2013c. Local interests oppose bill that could limit agricultural water use. *The Bay City Tribune*. 6 April 2013.
- Halvorson, B. 2013d. Senator says bill punitive on interruptible water customers. *The Bay City Tribune*. 6 April 2013.
- Halvorson, B. 2013e. TCEQ decision could cut irrigation for second year. *The Bay City Tribune*. 16 February 2013.
- Halvorson, B. 2014. Irrigation water at risk again. *The Bay City Tribune*. 28 January 2014.
- Hart, L.K. 1995. County to host regional symposium to discuss water. *The Bay City Tribune*. 12 December 1995.

- Haurwitz, R.K.M. 1995. Proposal provides aquifer options; Plan eyes Colorado – River as part of solution to help San Antonio, species. *The Austin American-Statesman*. 23 June 1995.
- Haurwitz, R.K.M. 1998. LCRA triples its water rights; Agreement with Garwood Irrigation. *The Austin American-Statesman*. 20 February 1998.
- Haurwitz, R.K.M. 2000. LCRA deal sets water supply for 100 years; Agency buys water rights. *The Austin American-Statesman*. 19 January 2000.
- Hayes, M.J.; Svoboda, M.D.; Wilhite, D.A. and Vanyarkho, O.V. 1999. Monitoring the 1996 drought using the standardized precipitation index. *Bulletin of the American Meteorological Society* 80(3): 429-438.
- Hellegers, P. and Leflaive, X. 2015. Water allocation reform: What makes it so difficult? *Water International* 40(2): 273-285.
- Hommel, L.; Boelens, R.; Harris, L. M. and Veldwisch, G. J. 2019. Rural-urban water struggles: Urbanizing hydrosocial territories and evolving connections, discourses and identities. *Water International* 44(2): 81-94.
- Howe, C.W.; Lazo, J.K. and Weber, K.R. 1990. The economic impacts of agriculture-to-urban water transfers on the area of origin: A case study of the Arkansas river valley in Colorado. *American Journal of Agricultural Economics* 72(5): 1200-1204.
- Kaika, M. 2005. *City of flows: Modernity, nature, and the city*. New York: Routledge.
- Kaiser, R. 2011. Texas Water Law and Organizations. In Griffin, R.C. (Ed). *Water Policy in Texas: Responding to the Rise of Scarcity*, pp. 26-48. Washington, DC: RFF Press.
- Kelly, E.C. and Schmitz, M.B. 2016. Forest offsets and the California compliance market: Bringing an abstract ecosystem good to market. *Geoforum* 75: 99-109.
- LCRA (Lower Colorado River Authority). 1989. Water Management Plan for the Lower Colorado River Basin. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority). 1991. Water Management Plan for the Lower Colorado River Basin. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority). 1992. Water Management Plan for the Lower Colorado River Basin. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority). 1999. Water Management Plan for the Lower Colorado River Basin. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority). 2010. Water Management Plan for the Lower Colorado River Basin. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority). 2015a. Historic drought and the Lower Colorado River Basin. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority). 2015b. Lakes Buchanan and Travis water management plan and drought contingency plans. Austin, TX: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority) and the City of Austin. 1999. First Amendment to December 10, 1987 Comprehensive Water Settlement Agreement between City of Austin and Lower Colorado River Authority. Austin, Texas: Lower Colorado River Authority.
- LCRA (Lower Colorado River Authority) and the City of Austin. 2007. Supplemental Water Supply Agreement by and between the City of Austin and the Lower Colorado River Authority. Austin, Texas: Lower Colorado River Authority.
- Lefevre, J.; De Swert, K. and Walgrave, S. 2012. Effects of popular exemplars in television news. *Communication Research* 39(1): 103-119.
- Lindell, C. 1999. Austin, LCRA ink contract for water; 7-0 council vote, \$100 million. *The Austin American-Statesman*. 8 October 1999.
- Mayring, P. 2000. Qualitative content analysis. *Forum: Qualitative Social Research* 1(2): 1-7.
- McCarthy, J. 2002. First World political ecology: Lessons from the Wise Use movement. *Environment and Planning A* 34: 1281-1302.
- McClanahan, D. 2001a. LCRA group opts to study bays. *The Bay City Tribune*. 5 December 2001.
- McClanahan, D. 2001b. Simon: Water plan revisions need more study. *The Bay City Tribune*. 26 October 2001.

- McCombs, M. 2005. A look at agenda-setting: Past, present and future. *Journalism Studies* 6(4): 543-557.
- McCombs, M. 2014. *Setting the agenda: The mass media and public opinion, 2nd edition*. Malden, MA: Polity Press.
- McManus, P.A. 2000. Beyond Kyoto? Media representation of an environmental issue. *Australian Geographical Studies* 38(3): 306-319.
- Molle, F. and Berkoff, J. 2009. Cities vs. agriculture: A review of intersectoral water re-allocation. *Natural Resources Forum* 33: 6-18.
- Molle, F.; Hoogesteger, J. and Mamanpoush, A. 2008. Macro- and micro-level impacts of droughts: The case of the Zayandeh Rud River Basin, Iran. *Irrigation and Drainage* 57(2): 219-227.
- Molle, F.; Wester, P. and Hirsch, P. 2007. River basin development and management. In Molden, D. (Ed), *Water for food – Water for life: A comprehensive assessment of water management in agriculture*, pp. 585-625. London, UK: Earthscan.
- Mondak, J.J. 1995. Newspapers and political awareness. *American Journal of Political Science* 39(2): 513-527.
- Moore, M.R.; Mulville, A. and Weinberg, M. 1996. Water allocation in the American West: Endangered fish versus irrigated agriculture. *Natural Resources Journal* 36(2): 319.
- Morehouse, B.J. and Sonnett, J. 2010. Narratives of wildfire: Coverage in four US newspapers, 1999-2003. *Organization & Environment* 23(4): 379-397.
- Nielsen-Gammon, J.W. 2011. The 2011 Texas drought: A briefing packet for the Texas legislature. College Station, TX: The Office of the State Climatologist.
- OECD (Organisation for Economic Cooperation and Development). 2015. *Water resources allocation: Sharing risks and opportunities*. Paris: OECD Publishing.
- Peet, R. and Watts, M. 2004. Liberating political ecology. In Peet, R. and Watts, M. (Eds), *Liberation ecologies: Environment, development, social movements*, pp. 3-47. New York, NY: Routledge.
- Pew Research Center. 2010. Americans Spending More Time Following the News. Washington, DC: Pew Research Center. www.pewresearch.org/wp-content/uploads/sites/4/legacy-pdf/652.pdf
- Pires, M. 2004. Watershed protection for a world city: The case of New York. *Land Use Policy* 21(2): 161-175.
- Price, A. 2007. Austin-LCRA water deal has some wary. *The Austin American-Statesman*. 5 August 2007.
- Price, A. 2014. Recreational interests want say in water plan. *The Austin American-Statesman*. 22 October 2014.
- The Media Insight Project. 2014. The Personal News Cycle. Arlington, VA: The American Press Institute and the Associated Press-NORC Center for Public Affairs Research.
- Ribot, J.C. and Peluso, N.L. 2003. A theory of access. *Rural Sociology* 68(2): 153-181.
- Richter, B.D.; Abell, D.; Bacha, E.; Brauman, K.; Calos, S.; Cohn, A.; Disla, C.; O'Brien, S.F.; Hodges, D.; Kaiser, S. and Loughran, M. 2013. Tapped out: How can cities secure their water future? *Water Policy* 15(3): 335-363.
- Sanchis-Ibor, C.; García-Mollá, M.; Torregrosa, T.; Ortega-Reig, M. and Jiménez, M. S. 2019. Water transfers between agricultural and urban users in the region of Valencia (Spain). A case of weak governance? *Water Security* 7: 100030.
- Scheibal, S. 2002. Effluent reclamation request makes waves: Austin wants to get back wastewater it puts into Colorado. *The Austin American-Statesman*. 18 November 2002.
- Scott, C.A. and Pablos, N.P. 2011. Innovating resource regimes: Water, wastewater, and the institutional dynamics of urban hydraulic reach in northwest Mexico. *Geoforum* 42(4): 439-450.
- Shupe, S.J.; Weatherford, G.D. and Checchio, E. 1989. Western water rights: The era of reallocation. *Natural Resources Journal* 29: 413-434.
- Slater, M.D.; Hayes, A.F. and Ford, V.L. 2007. Examining the moderating and mediating roles of news exposure and attention on adolescent judgments of alcohol-related risks. *Communication Research* 34(4): 355-381.
- Slater, M.D. and Rasinski, K.A. 2005. Media exposure and attention as mediating variables influencing social risk judgments. *Journal of Communication* 55(4): 810-827.
- Smith, M. 2004. Diversion plan could affect downstream flow. *The Bay City Tribune*. 8 September 2004.

- Sonnett, J.; Morehouse, B.J.; Finger, T.D.; Garfin, G. and Rattray, N. 2006. Drought and declining reservoirs: Comparing media discourse in Arizona and New Mexico, 2002-2004. *Global Environmental Change* 16(1): 95-113.
- Staff Reports. 2012. Drought plan could still mean more water. *The Bay City Tribune*. 17 November 2012.
- Sultana, F. 2011. Suffering for water, suffering from water: Emotional geographies of resource access, control and conflict. *Geoforum* 42(2): 163-172.
- Swyngedouw, E. 1997. Power, nature, and the city. The conquest of water and the political ecology of urbanization in Guayaquil, Ecuador: 1880-1990. *Environment and Planning A* 29: 311-332.
- Swyngedouw, E. 2004. *Social power and the urbanization of water: Flows of power*. New York: Oxford University Press.
- Toohey, M. and Price, A. 2012. State senators fight plan to release water for rice. *The Austin American-Statesman*. 13 December 2012.
- Trans-Texas Water Program. 1994. Trans-Texas Water Program: West Central Study Area Phase I Interim Report. Orange, TX: Trans-Texas Water Program.
- Turner, M.D. 2009. Ecology: Natural and political. In Castree, N.; Demeritt, D.; Liverman, D. and Rhoads, B. (Eds), *A companion to environmental geography*, pp. 181-197. Malden, MA: Wiley-Blackwell.
- US Census Bureau. 2012. Census estimates show new patterns of growth nationwide. www.census.gov/newsroom/releases/archives/population/cb12-55.html (accessed 5 May 2019)
- Villarejo, D. 1996. 93640 at risk: Farmers, workers, and townspeople in an era of water uncertainty. Davis, CA: The California Institute for Rural Studies.
- Wagner, K. 2012. Status and trends of irrigated agriculture in Texas. College Station, TX: Texas Water Resources Institute.
- WGA (Western Governors' Association). 1996. 1996: Drought Response Action Plan. Denver, CO: Western Governors' Association.
- Wong, K.A. and Bosman, M.M. 2014. Spatial displacement and temporal deferral: Toward an alternative explanation of the Apalachicola-Chattahoochee-Flint Basin water conflict. *Water Alternatives* 7(3): 584-609.
- Wright, S.W. 1994. In water plan, San Antonio might tap Lake Austin. *The Austin American-Statesman*. 17 March 1994.
- Wright, S.W. 1996. Residents near lakes fear water transfer; Meetings on water needs raise concern about San Antonio getting flow from Highland Lakes. *The Austin American-Statesman*. 25 August 1996.

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