Predatory Paternalism: The Changing Rights to Water, Enforcement, and Spillover Effects on Environmental Quality in the American West

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Abstract

My dissertation comprises an integrated approach for assessing the impacts of delayed enforcement and quantification of American Indian reserved water rights in the western United States, as measured by priced-in uncertainty in wholesale water markets, water use, and the presence of pollutants in surface water streams and rivers. I examine the implementation (and lack thereof) of *Winters* rights, a term that refers to the 1908 U.S. Supreme Court case on implied rights to water for tribes. In *Winters v United States* (207 U.S. 564 (1908), the court affirmed that the U.S. federal government had reserved rights to water for the tribes of the Fort Belknap Indian Reservation, prioritizing their treaty with the U.S. government over the states' subsequent appropriation of water rights to non-Indian settlers. The court affirmed that the power of the United States to reserve such water "could not be denied." This has subsequently, and often, been hailed as a major victory for tribes. Yet at the time, no American Indian was involved directly in the filing, negotiating, procuring or planning for the litigation, and the tribes' role in the process was seen as indirect by the Office of Indian Affairs. The federal government, charged with protecting, preserving and enforcing trust rights for tribes, neglected to protect these rights, and did not pursue legal action to quantify and enforce these rights until several decades later (the first quantification standard was not defined until 1963 in the U.S. Supreme Court ruling for *Arizona v. California*).

I develop a comprehensive analysis of the process of establishing these *Winters* rights from conception to modern-day enforcement. In the 100-plus years since the *Winters* case, only 80 western tribes, out of more than 200, have pursued action to enforce and quantify their historic rights to water (in 81 proceedings), with only around 70% of the proceedings resulting in a definitive quantification of water rights for tribes so far, most of which after decades of negotiating or litigating for rights. Since 1990, it has been the official stance of the federal government to support and encourage out-of-court settlement of water rights with other non-Indian stakeholders who were granted rights by states to tribes' water. This is a voluntary process, and many negotiations have dissolved into infinitely-ongoing processes. Meanwhile, the incumbent non-Indian appropriators have been able to utilize the resource in question. The mean duration of these negotiations is 25 years with some lasting many more decades.

My thesis is comprised of three parts. First, using a panel-hazard model setup, I analyze why certain tribes initiate *Winters* proceedings earlier than others, and which factors increase the probability of negotiation. Increasing probability of initiating *Winters* negotiations is in part based on the belief that tribes will be able to settle their cases and end up with increased water rights benefits. There are historic factors to this decision, and tribes that had less land-loss historically, and take up larger shares of the state land area are more likely to initiate claims. I also model the predictors of settling cases (i.e., the duration of negotiation) using survival analysis, and separately model the characteristics of pollution and water use changes as a function of the duration of negotiation. This helps to unpack issues of entrenchment, leaning on the bargaining literature, as non-Indian appropriators can use delay tactics in order to maintain the "status quo," essentially elongating bargaining infinitely to protect their entrenched use. I find that water use, evidenced by streamflow measures, increases as negotiation durations increase.

Second, I ask how the negotiation process itself affects the water supply and water quality. As water conflicts around the world become more salient with climactic and weather changes, understanding how the conflict resolution process itself engenders strategic behavior amongst

resource users, and environmental spillover effects in water quality is increasingly important. I study the 81 *Winters* proceedings to determine the impacts of these legal processes on environmental quality, modeling streamflow on and around reservations before, during and after negotiations. I also model five pollutants as a system of equations in a similar set-up to assess whether the negotiation process impacts water quality. I find that water use increases once rights are settled, but water pollution increases during the negotiation process, falling again in some cases once rights are properly defined. These results are largely concentrated upstream-of and on reservations. I also separately run these estimations on those agreements that incorporate environmental policy initiatives, and find that resolutions that include environmental use clauses help to further mitigate increases in pollution once rights are resolved, particularly on reservations and upstream.

The final chapter in my dissertation models uncertainty in the wholesale western water market, using subset of water transaction data. I calculate a risk premium for owning water, also aligned with *Winters* periods. The "headline" story about unsettled *Winters* rights are that they impose excessive uncertainty, and impede growth, development, and "efficient" use of water. I find the opposite, that uncertainty, as measured by long-run calculated discount rates for water falls when negotiations begin, and falls as negotiation durations go on, suggesting a level of entrenchment in the strategic setting. I do find evidence as well that uncertainty, as measured by the risk premium in the water markets, does fall once rights are settled, as economic theory of property rights would suggest.

This dissertation contributes to the literature by developing the first ever spatial mapping of water quality data relative to American Indian reservations, and connected to policy changes in property rights enforcement. I rely on millions of observations over time of water flow and quality for this analysis. It also includes the first research to present an estimate for the risk premium for water in the context of *Winters* resolution, using long-term lease prices of varying tenures to compare with sales prices.

When combined with other research that I have been performing on the destruction of the reservations, I find that western settlement relied in many ways on transferring tribal land and resources out of Indian use and ownership, and that the federal and state government passed increasingly predatory legal mechanisms for transferring wealth from tribes to settlers in the 19th and the first half of the 20th century. This was a state-sanctioned wealth transfer, while locking tribes in to a "trust" relationship with the federal government. The process of clawing back historic rights is itself non-neutral, engendering large costs to tribes and increased water pollution during negotiations.