

# **The Cleanest Water and the Dumbest Kids:** *Do Small Water Systems Comply With the Safe Drinking Water Act?*



**James Salzman**

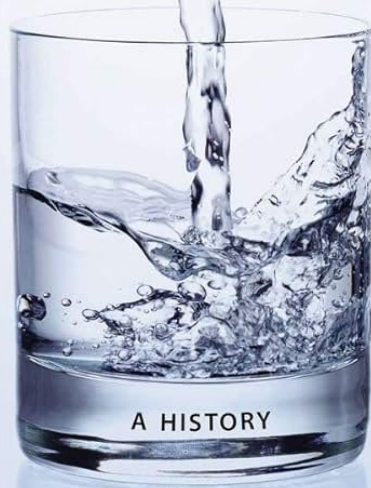
UCSB Bren School of Environmental Science  
& Management  
UCLA Law School

**Ana Mackay Peltzer**

UCLA Law School

"Instead of buying your next twelve-pack of bottled water, buy this fascinating account of all the people who make sure you have clean water to drink." —BILL MCKIBBEN

# DRINKING WATER



A HISTORY

JAMES SALZMAN

OVERLOOK DUCKWORTH

# Safe Drinking Water Act

- Coverage
  - provides water for human consumption to at least 15 service connections
  - or serves an average of at least 25 people for at least 60 days a year
- National Primary Drinking Water Regulations
  - Maximum Contaminant Levels for roughly 100 contaminants
- State Primacy and Enforcement
  - EPA sets standards but 49 states and most territories implement

# MCLs

- Cryptosporidium
- Giardia
- Hexachlorocyclopentadiene
- Trans-1,2-Dichloroethylene
- PFAS

		Water System Population Size Category					Totals
		Very Small 500 or less	Small 501-3,300	Medium 3,301-10,000	Large 10,001-100,000	Very Large >100,000	
CWS	# Systems	28,346	13,737	4,936	3,802	419	51,356
	Pop. Served	4,763,672	19,661,787	28,737,564	108,770,014	137,283,104	299,216,141
	% of Systems	55%	27%	10%	7%	1%	100%
	% Of Pop.	2%	7%	10%	36%	46%	100%
NTNCWS	# Systems	15,461	2,566	132	18	1	18,178
	Pop. Served	2,164,594	2,674,694	705,320	441,827	203,000	6,189,435
	% of Systems	85%	14%	1%	0%	0%	100%
	% Of Pop.	35%	43%	11%	7%	3%	100%
TNCWS	# Systems	80,347	2,726	92	13	1	83,179
	Pop. Served	7,171,054	2,630,931	514,925	334,715	2,000,000	12,651,625
	% of Systems	97%	3%	0%	0%	0%	100%
	% Of Pop.	57%	21%	4%	3%	16%	100%
Total # of Systems		124,270	19,029	5,160	3,833	421	152,713

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“[W]e will have the cleanest water in the state and the dumbest kids.”

- - Water official from Lewiston, Maine, testimony during Senate hearings on 1996 SDWA amendments

## Leads one to wonder...

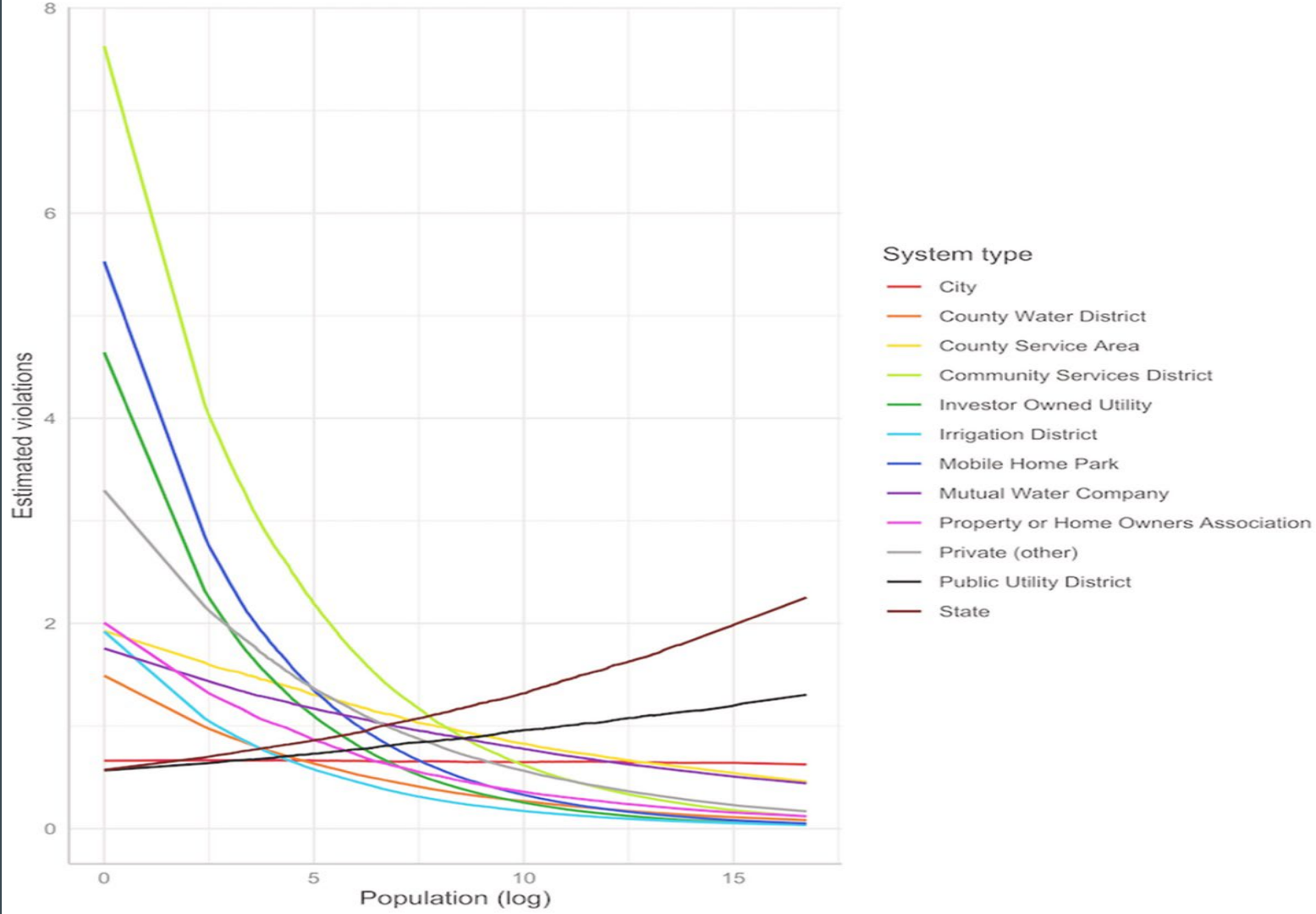
- Is it realistic to expect small PWSs to comply with SDWA's highly technical requirements?
- Is it likely that the ~140,000 PWSs with little funding and limited staffing are all in compliance with all the drinking water standards?
- *You can't assess or design law and policy unless you understand the problem you are trying to solve*

Of the state's nearly 2,900 community drinking water systems, more than 2,400 are considered small, serving fewer than 3,300 homes and businesses...

Nearly 1,500 systems serve fewer than 100 connections. These very small systems often don't have an office, the books are done on someone's kitchen table, they may be run by a part-time manager who is managing the system in their spare time to support their community. It's almost impossible for most urban folks to conceive of what these systems face. They have very little capacity, which makes times like these especially hard for them.



Ellen Hanak, Ph.D.  
Public Policy Institute of California



## Leads one to wonder...

- Which types of systems account for most noncompliance?
- What are the most frequent types of violations?
- How are they correlated to location, income, or race?
- What are the most important factors causing noncompliance?

# Research Scope

- Comprehensive review of publications between 1997 and 2024
  - EPA
  - Public policy research institutes
  - Environmental, public health, science, economics journals
  - Law reviews
- **25 articles specifically examining SDWA noncompliance**
  - No apple-to-apples comparisons
  - Analyses for different contaminants in different places across different geographic scales over different time periods for different variables

# Research Breadth

- Persistence of Violations
- Health-Based Violations
- Monitoring & Reporting
- Disadvantaged Communities & Race
- Rural Communities

# Research Breadth

- Size Matters

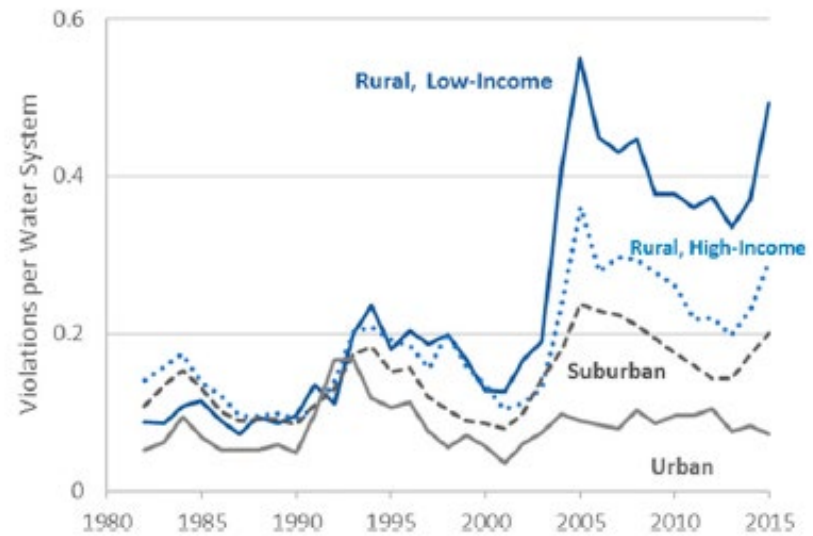
- Strong correlation with monitoring violations
- Strong correlation with reporting violations
- Strong correlation with persistence of violation
- Mixed correlation with health-based violations

- Location Matters

- Strong correlation between urban and rural

- PWS compliance also impacted by interactions of variables

- System size, location, income, and service population demographics



# Why Is It Hard To Be Small?

- Staffing
  - fewer staff dedicated to operating and managing the system
  - less time to attend trainings and interact with peers
- Finance
  - Ability to hire more staff, pay for more training or contract out services
  - Cover O/M costs
  - Invest in infrastructure
  - Few economies of scale
- Expertise
  - Capacity to track and implement regulations,
  - apply for funding



# Factors Contributing to small PWS noncompliance

- *Technical, Managerial and Financial Capacity*
- Inability to Access Assistance Programs
- Fragmentation and Economies of Scale
- Location
- Reliance on Groundwater

# Policies to address small PWS

- Funding
- Variances
- Consolidation
- Privatization

# Where to go from here?

- We should continue to expect higher rates of noncompliance in PWS
- Policies to date, however well intended, have not solved the problem
- This will only become more challenging with “forever chemicals”
- What we do know suggests more targeted interventions
- *Is the trade-off really between cleaner water and dumber kids?*

