UNQUENCHABLE

In California prisons, inmates flush toilets to communicate, to warn each other, and to flood their cells in protest. Wasteful? Yes, but compared to 2,500 gallons of water to raise a pound of beef ? Or snow machines eating 10,000 gallons hourly to assure skiers' pleasure during a dry winter?

The most difficult thing about a water crisis, says Robert Glennon in *Unquenchable: America's Water Crisis and What to Do About It* (2009) is convincing folks there's a crisis.

Besides the Colorado and the Rio Grande, almost 30 American rivers dry up before reaching their outlets. 35 of the lower 48 states are engaged in water conflicts. Householders routinely haul water in Arizona, Tennessee and California, having none in their taps. Lakes Michigan and Huron have dropped 2 feet (the Great Lakes hold 95% of our fresh water supply). Groundwater levels have sunk 200-900 feet countrywide. Resulting subsidence affects 17,000 square miles of the U.S. – 40 feet from 1925 – 1970 in the San Joaquin Valley. And we drill 800,000 new unregulated wells a year.

Las Vegas casinos, in the Mojave Desert, sport competing water extravaganzas. Some Florida laws require homeowners to install thirsty turf. Irrigation increases crop production, and so has become common in the wet East, draining yet more water. Ethanol, now required as a gasoline additive, may consume more energy than it contains. Yet one gallon takes from 1,700 – 2,500 gallons of water to produce.

One 60 watt bulb that burns 12 hours a day consumes 3,000 – 6,300 gallons of water a year. During the same span we flush 7 billion gallons down our toilets. Laws favor irrigation of low-value crops, and mind-numbing sprawl.

Is there a crisis? California imports more water than any place on earth. Most Californians, asked about its source, said it came from a tap.

Water rises from the oceans into clouds, and falls as rain and snow, creating lakes and rivers which return it to the sea. Almost all we use returns to that cycle; we drink the same water the dinosaurs drank, and there's as much water now as ever.

Trouble is, it's less and less available for more and more of us.

That's because we withdraw it rapidly and it recharges slowly – human post-industrial vs. geologic time scales. Also because we've fouled so much of it – with sewage, fertilizer, industrial waste, medications, fracking, etc. Storms flood treatment plants; 83 agricultural chemicals contaminate our tap water. Drawing down aquifers concentrates poisons, making the water unusable.

What, then, can we do? Past solutions – diverting rivers, building dams, sinking more wells – are no longer cost effective. Ditto piping water all over the West.

Storm water capture – we dump a trillion gallons yearly into the southern California ocean – has been embraced by some, along with composting toilets, waterless urinals, drought tolerant landscaping and rainwater catchment. Desalinization works where there's unlimited energy and money.

Water is crucial not just for agriculture and homes, but for industry: it's "the real lubricant of the American economy." And since it's exhaustible, we need to start measuring its use. Currently we have no idea how many straws sip from the same half-full glass.

Practically, we need to stop combining storm and sewer water – only the latter needs intensive cleaning. And stop treating it all to drinking water standards – we use less than 1% for drinking, cooking and bathing.

In general, markets work better than governments or bureaucracies for control. Give farmers monetary incentives to conserve, and let them sell the excess. Allow new development only when developers secure rights from current users – zero new use.

As our population surges by 120 million in the next half century, listen, the next time you flip a light switch or turn on your smart phone, for the sound of running water.