

TO THE LAST DROP

A SHRINKING GROUNDWATER SUPPLY

The Virginia Coastal Plain is running out of groundwater. There, I've said it! Stamp it on bumper stickers and tee shirts. Shout it from the steps of the State Capitol. Share it on Twitter. "Good to the last drop!" The artesian aquifer system of the region is already in overdraft and the day when it will no longer be adequate to meet our water demands is fast approaching. Let's examine the evidence.

Artesian water levels have been falling throughout the aquifer system for decades, at rates typically of 1.1 to 2.5 feet per year. Expanding and coalescing cones of depression are diminishing available drawdown (reaching critical levels at some localities) are further signs of the approaching storm. The late Herbert Stein, chairman of the Council of Economic Advisers under Presidents Nixon and Ford, perhaps said it best: Things that can't go on forever, don't. To make matters worse, the law that is supposed to protect the groundwater supply of Virginia appears powerless to stop the depletion.

A FLABBY GROUNDWATER LAW

By passing the Ground Water Act of 1992 (hereby termed, in lawyer speak, "the Act"), the Virginia legislature recognized the threat to the groundwater supply of the Commonwealth. Legislators realized that "continued, unrestricted usage" of groundwater is contributing to groundwater shortage, "thereby jeopardizing the public welfare, safety and health." Responding to this threat, the legislators declared in the Act "that in order to conserve, protect and beneficially utilize the ground water of this Commonwealth . . . management and control of ground water resources is essential."

Management and control. The phrase has a nice ring to it and, as the essayist E. B. White might have put it, "sounds good because it looks good." The problem is that while the Act specifies what is to be managed and controlled (i.e., groundwater resources), it fails to spell out the goals of this activity. What is to be achieved by management and control? As the ancients used to say, *quo finitum*. To what end? One is left to infer what goal the legislators had in mind from specific provisions of the Act. Stripped to bare bones, the Act makes it illegal for "any person" to withdraw 300,000 gallons of groundwater per month in a Ground Water Management Area (GWMA) without a permit from the State Water Control Board (SWCB). An earlier act of the legislature had established two GWMA's on the Virginia Coastal Plain: Eastern Virginia and Eastern Shore Groundwater Management Areas. The Groundwater Act of 1992 also granted to the SWCB the authority to establish additional Ground Water Management Areas and defined the criteria by which the Board could initiate such action. Clearly, then, the legislators intended to respond to the "continued, unrestricted usage [of groundwater]" by placing restrictions on the amount of groundwater that "any person" was permitted to withdraw in a GWMA.

In truth, the Ground Water Act of 1992 is dangerously flabby. It boldly proclaims that "the Board shall ensure that the maximum possible safe supply of ground water will be preserved and protected for all other beneficial uses," but it does nothing to remedy the worsening problem of overdraft nor halt the continuous depletion of the artesian aquifers. Here's a brutal truth: The preservation and protection of the groundwater supply lies solely in our ability to reduce withdrawals to a level that can be sustained by natural recharge. Instead of reducing overall groundwater withdrawals from the Coastal Plain aquifers, the management tools of the Act, while constraining withdrawals from individual water supply projects, have allowed the total number of projects and the total withdrawals to grow. This kind of

management is little more than a form of wackamole. It represents not a comprehensive strategy but a tyranny of small decisions. Let me say plainly, the goal of the current groundwater law is all wrong.

GROUNDWATER LAWS AND REGULATIONS IN THE NEW AGE

If groundwater shortages and supply conflicts are to be avoided, or at least moderated, then the goal of laws and regulations must be to foster the transition to a sustainable groundwater supply (click [here](#) for a slide presentation describing the need to shift to a sustainable groundwater supply). What I have elsewhere called the "Age of Abundance and Complacency" is ending (see *The Lifetime Stages of an Artesian Groundwater System*), and we can no longer assume that the groundwater supply of the Virginia Coastal Plain is infinite. Nor can we assume that we can continue to withdraw groundwater without suffering the hydrologic or economic consequences. New laws and regulations that have as their goal the utilization of alternative water sources to meet our demand must be devised and promulgated. Given the limits intrinsic to water supply technologies such as conservation and desalinization, the focus of future legislation must be on expanding water recycling and reuse. Sustainability must become more than just an environmental catch phrase.

In conclusion, future legislation must shift the role of the Commonwealth from enforcer of restrictions to partner in solutions. It must define the Commonwealth as a collaborator with the private sector in promoting, developing, and supporting a sustainable groundwater supply.

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