

## Virginia Association of Soil & Water Conservation Districts Position Paper on Need for Groundwater Protection Data and Research

**ISSUE:** Groundwater is the water supply source for more than 4400 public water systems in Virginia, and in many areas is the sole sustainable water source for rural residents dependant upon wells and springs. Most of the time, surface streams are predominantly comprised of groundwater. *The prolonged drought, in combination with unprecedented growth pressures on localities, has raised concerns that groundwater quantity and quality are not adequately monitored or managed at the local and regional levels.* The State Water Commission is currently evaluating water protection and monitoring needs in the karst (cavernous limestone and dolomite) watersheds of the Shenandoah Valley. The VASWCD position is that this type of technical/scientific assessment of groundwater availability and purity must be extended across the Commonwealth to all areas of heavy groundwater dependence.

**WHY IMPORTANT:** Statewide, more than 80% of Virginias rely on groundwater for drinking water supplies. The top three uses of groundwater in the Commonwealth are 1) rural domestic and agricultural, 2) public water systems, both urban and rural, and 3) industrial and commercial. Groundwater protection is the most basic component of watershed management in that it is the source of both headwaters and base flow to rivers and streams. When groundwater supplies are impacted by pollution or over-withdrawal, the results have broad economic and ecological implications, and solutions are often cost-prohibitive. An unknown number of individuals are impacted every year by contaminated groundwater and/or dwindling water tables, with consequences ranging from human health considerations and the disappearance of certain aquatic species, to reduced property values and lost economic opportunities.

*Virginia has no solid mechanism for protecting private groundwater supplies, as well as the overall public resource. Nor do we have a scientific basis for sound decision-making at the local level.* Most counties and towns have the community will and planning infrastructure to act now to protect key groundwater resource areas, but are lacking the technical information to support and defend these types of decisions. The value of groundwater resources to any particular individual or community is difficult to quantify, yet no one would dispute the importance of unlimited groundwater availability and unquestionably potable drinking water. In the words of conventional wisdom, "...you don't miss the water 'til the well runs dry".

**RATIONALE:** Although a number of state and federal laws relate to groundwater and surface water used by public water systems, there is no official regulatory protection for private well and spring owners. The **Virginia Groundwater Act of 1973** provides for the designation of local groundwater management areas that regulate large groundwater withdrawals (administered by DEQ); however, only two areas in eastern Virginia have been so designated, primarily to avoid salt-water intrusion into coastal freshwater aquifers. A great deal of funding and technical resources have been directed toward these two areas, which have more than 100 monitoring wells, while the rest of the state has been neglected in terms of groundwater data collection. For instance, the DEQ and the US Geological Survey maintain only eight groundwater monitoring wells scattered out among 30 or more western Virginia counties. This density of monitoring stations is not adequate to make valid long-term predictions about the general availability and health of groundwater resources for any specific area.

The **Groundwater Standards and State Anti-Degradation Policy (1992)** forbids the direct injection of any waste into groundwater, and *requires that present and anticipated uses of groundwater be preserved.* The responsibility for protecting groundwater, though, is not clearly assigned to a specific agency, and there is no staff solely dedicated to serving the needs of private well and spring owners with concerns about adjacent land use activities. Of common concern to

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the VASWCD, local landowners, and decision-makers is that, at this time, no agency or university in Virginia can accurately and truthfully answer the following questions based on scientific evidence and technical data:

- What effects are increasing population and urbanization having on groundwater supplies?
- What early detection system exists to prevent over-withdrawal of groundwater and declining groundwater availability?
- How can private well and spring users be protected from on-site and off-site sources of pollution?
- What are the effects of coal bed methane extraction on local groundwater resources?
- What are the effects of pesticide and herbicide use at golf courses, residential developments, and along utility lines?
- What are the effects of commercial and industrial waste land application operations that are not subject to the level of regulation required of agricultural wastes (no minimum soil depth or nutrient management plan)?
- What are the effects of urban storm water runoff and wastewater effluent directed into sinkholes and sinking streams (Class V injection wells)?
- What chemicals or potentially hazardous biological shipments are routinely transported along interstates and rail lines, and how is the local emergency response network prepared and equipped to quickly deal with spills and accidents along these corridors?

### **Additional Issues –**

- Bacteria and nitrate in the carbonate aquifers of the Valley & Ridge province, especially the Shenandoah Valley.
- Effect of landfills on ground-water quality. Recent legislative action concerning the influx of out-of-state refuse has increased attention to this issue.
- Declining ground-water levels throughout the Coastal Plain.
- Last year's drought conditions have stressed the ground-water resources and numerous dry wells have been reported.
- Lack of knowledge on recharge mechanisms and rates limits the evaluation of proposed and existing ground-water withdrawals. Many communities are interested in whether the ground-water resources can sustain the ever-increasing demands.
- Lack of a centralized data-management system for ground-water resources of the Commonwealth. Water information is available from numerous Federal, State, and local agencies and numerous civic groups in various formats.

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- The statewide ground-water levels monitoring network has limited coverage in the fractured-rock terrains.
  
- Lack of a statewide ambient ground-water quality network.

### **Policy**

In response to the concerns of their constituents, Shenandoah Valley legislators sponsored House Joint Resolution No.161, which establishes a joint subcommittee of the State Water Commission to study groundwater issues and the need for a regional groundwater-monitoring network in that multi-county region. The VASWCD endorses this type of technical study for other areas of the state, as a mechanism for moving toward improved, long-term groundwater protection before pollution problems and declining water tables become severe and irreversible.

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This document was produced with the extensive assistance of several individuals who also have agreed to be listed as resource people for this subject:

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