The Future Supply of Drinking Water In Maryland

"Water, water, everywhere, Nor any drop to drink"

The Rime of the Ancient Mariner, Coleridge

Introduction by:

Albert Tucker, Ph.D.

President, Board of Trustees

Forum Committee:

George Hill (chair)
Gary Antonides
Dr. William Klepczynski
Richard Romer
Dr. Joan Turek

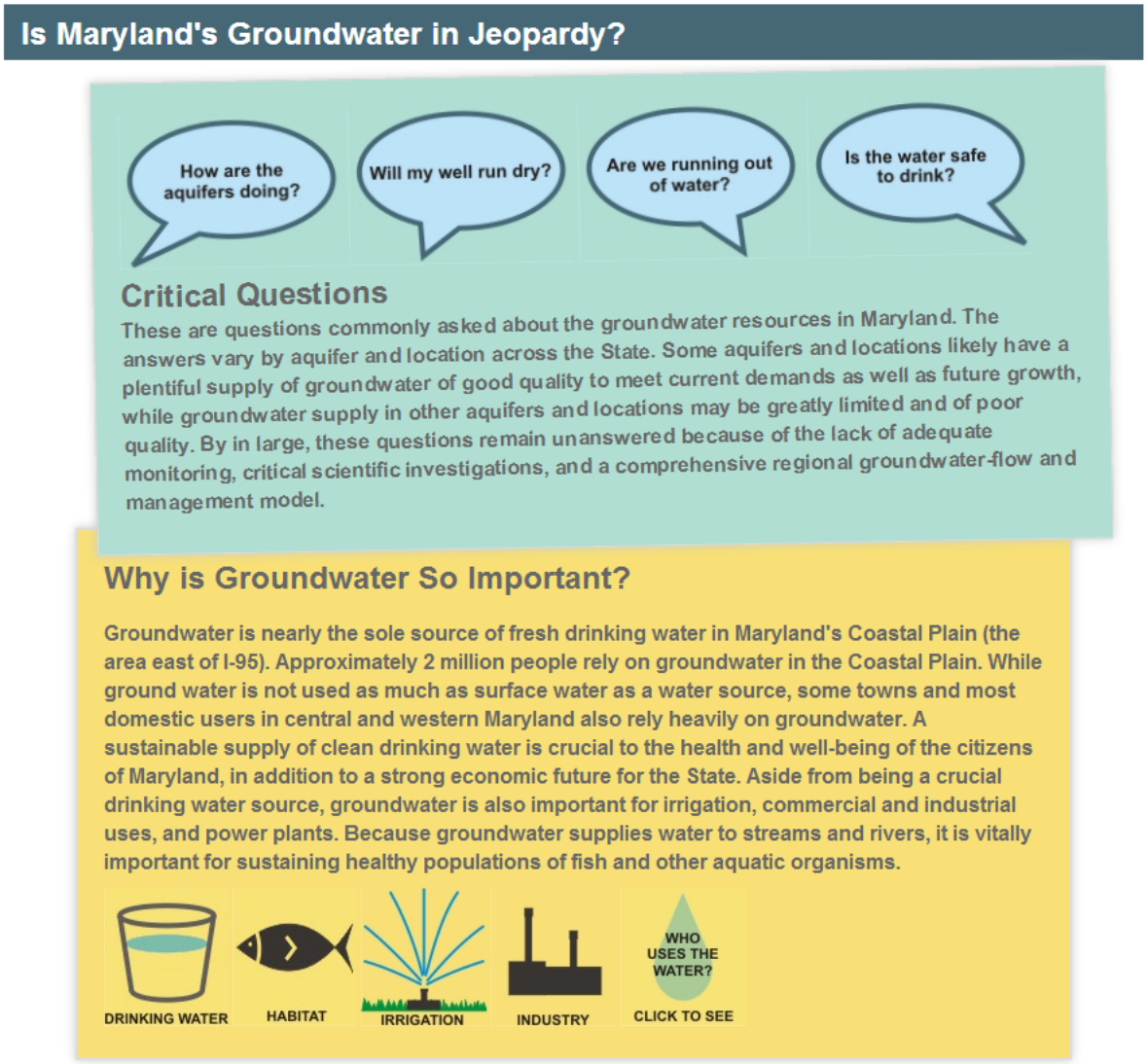
CEPA
P.O. Box 117, Galesville, MD 20765

What do we hope to accomplish this evening?

- To continue CEPA's campaign to alert the public about the major issues facing the sustainability of Maryland's water supply
- To update progress (or stasis) from previous 2008 forum
- To highlight impending issues not considered
  - Growth
  - Climate Impacts

Questions you may have

Already Posed on the Maryland Geological Survey website



http://www.mgs.md.gov/groundwater/gw-status.html

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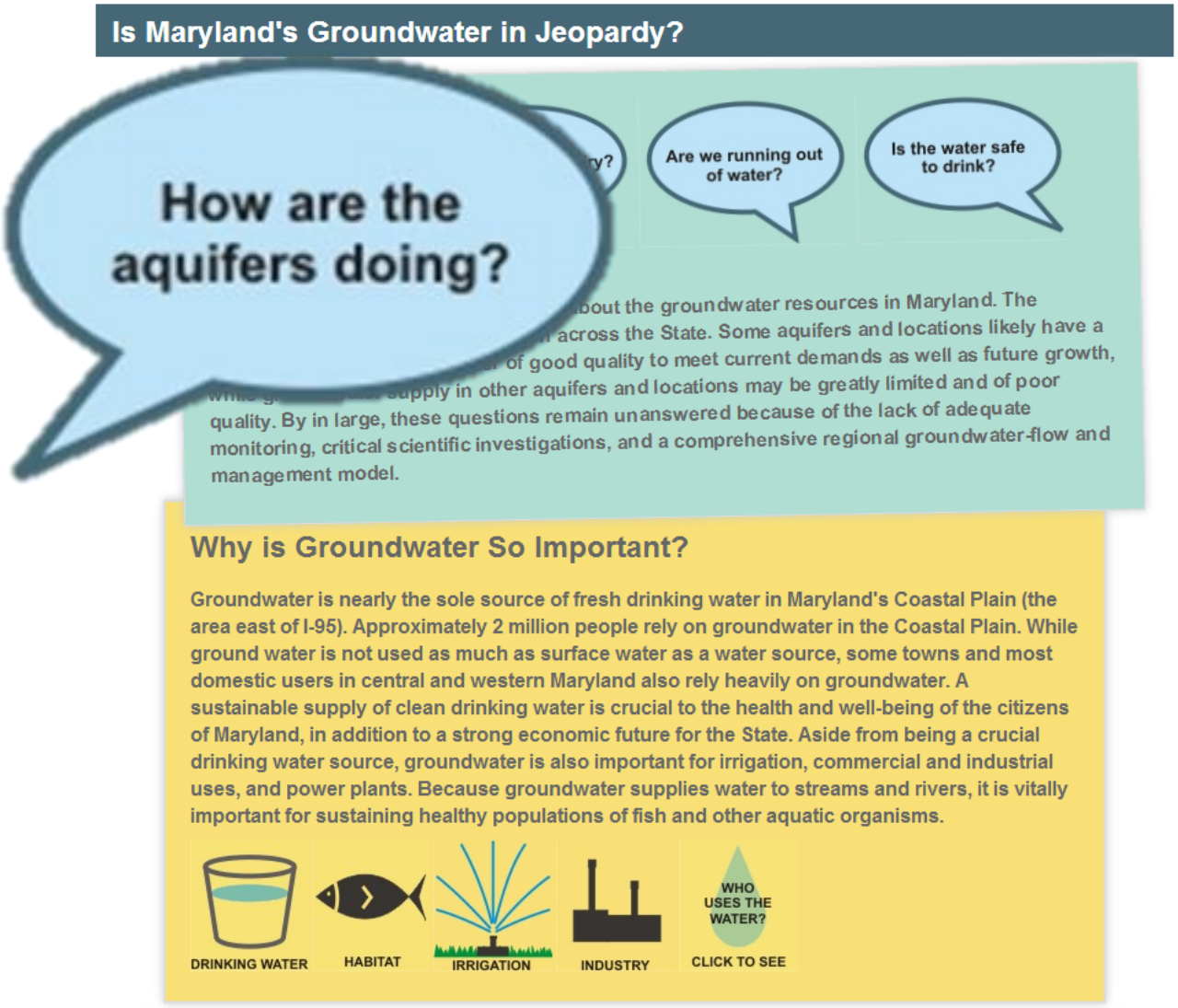

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Questions you may have

Why is Groundwater So Important?

Groundwater is nearly the sole source of fresh drinking water in Maryland's Coastal Plain (the area east of I-95). Approximately 2 million people rely on groundwater in the Coastal Plain. While ground water is not used as much as surface water as a water source, some towns and most domestic users in central and western Maryland also rely heavily on groundwater. A sustainable supply of clean drinking water is crucial to the health and well-being of the citizens of Maryland, in addition to a strong economic future for the State. Aside from being a crucial drinking water source, groundwater is also important for irrigation, commercial and industrial uses and power plants. Because groundwater supplies water to streams and rivers, it is vitally important for sustaining healthy populations of fish and other aquatic organisms.

Remember Groundwater is not just for you!

http://www.mgs.md.gov/groundwater/gw-status.html

Questions you may have

A common theme this evening

Critical Questions

These are questions commonly asked about the groundwater resources in Maryland. The answers vary by aquifer and location across the State. Some aquifers and locations likely have a plentiful supply of groundwater of good quality to meet current demands as well as future growth, while groundwater supply in other aquifers and locations may be greatly limited and of poor quality. By in large, these questions remain unanswered because of the lack of adequate monitoring, critical scientific investigations, and a comprehensive regional groundwater-flow and management model.

Is Maryland's Groundwater in Jeopardy?

Critical Questions

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- Lack of Funding
- Lack of people
- Legislative Inaction

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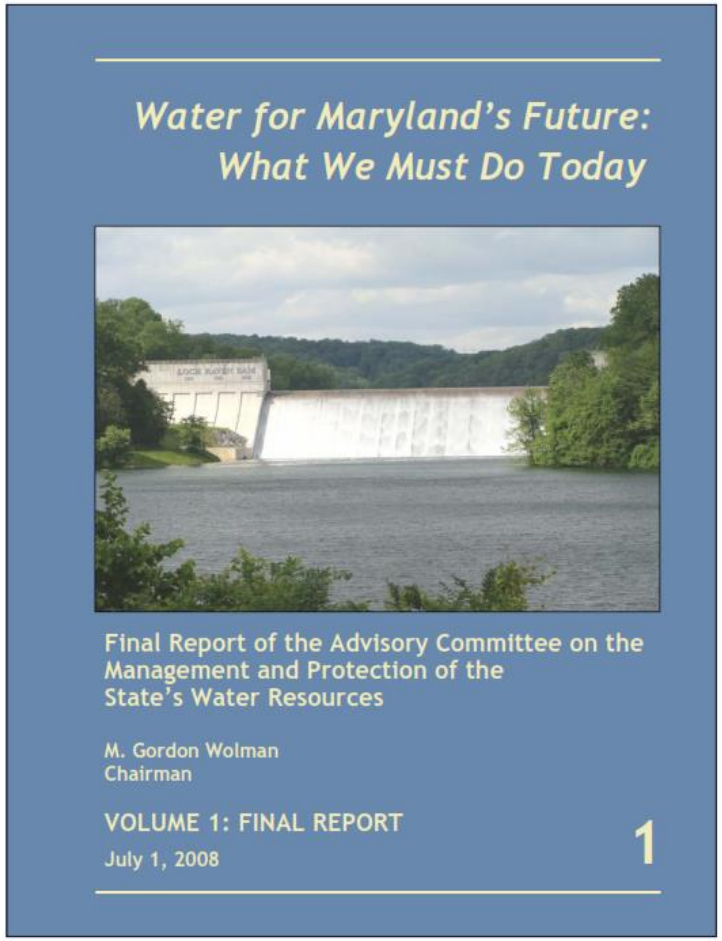
CEPA's Interest in Source Water

- Maryland experiences droughts every 1 – 2 decades
- Previous droughts caught attention of legislators
- 1985 legislators instituted an annual report to legislature
- 1998 – 2002 drought caused severe water use curtailments, building restrictions, fish kills

- CEPA with others advocated for establishment of Water Advisory Committee; seventy legislators requested the governor to appoint an executive committee.
- Final report issued 2008

What has happened since then?

The Wolman Report



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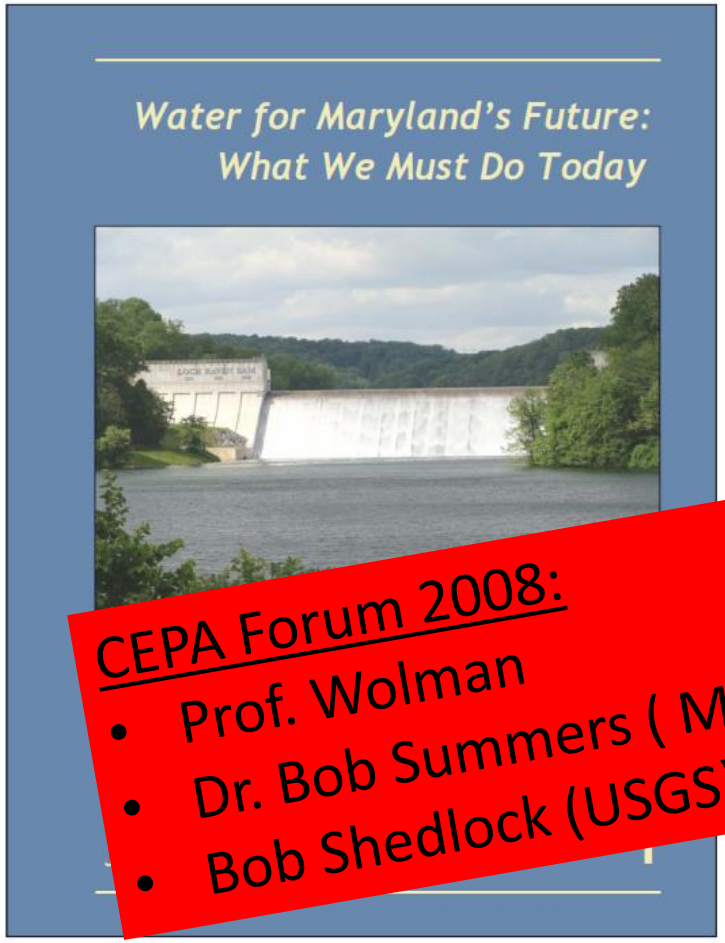
The Wolman Report



CEPA Forum 2008:

- Prof. Wolman
- Dr. Bob Summers (MDE Secretary)
- Bob Shedlock (USGS)

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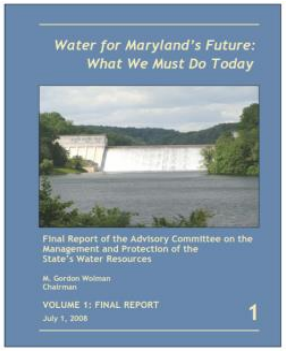


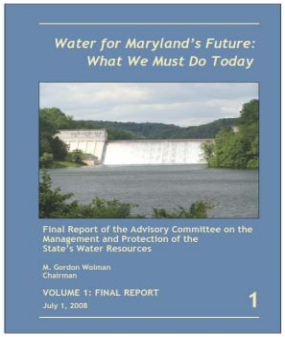
FINDINGS AND RECOMMENDATIONS

I. Maryland must develop a more robust water resources program based on sound, comprehensive data.

A. Critical basic data must be obtained.
B. A Statewide water supply plan should be developed.
C. State and local governments should coordinate and plan regionally.

II. The staffing, programmatic and information needs of the water supply management program must be adequately and reliably funded.

A. Establish a permit fee to fund the cost of administering the permitting system.
B. Fund the hydrologic studies with a separate appropriation.
C. Fund an expanded monitoring network.
D. Provide funding for local governments.
E. Improve the recruitment and retention of personnel.



FINDINGS AND RECOMMENDATIONS

III. Specific legislative, regulatory and programmatic changes should be implemented.

- **A.** The State should take specific steps to promote collaborative local planning and to facilitate regional planning.
- **B.** MDE should codify its water allocation policies.
- **C.** The State should require local jurisdictions to protect source waters.
- **D.** State and local governments should strengthen their programs for water conservation, water reuse, and demand management.
- **E.** Maryland should strengthen the regulation of individual wells to better protect public health.
- **F.** State and local governments should discourage the use of individual wells in areas at high risk for well contamination.
- **G.** MDE should make greater use of Water Management Strategy Areas.
- **H.** The General Assembly should authorize administrative penalties for violations of water appropriation permits.
- **I.** Maryland should develop an effective water supply outreach program.

In the Meantime

- **Population Growth Continues**
- **Climate Change marches on**

What Does the EPA Think?

Saving Water in

Maryland

look for WaterSense Meets EPA Criteria

Maryland's direct access to the Potomac River, Chesapeake Bay, and Atlantic Ocean makes it a haven for water lovers, water sports, and fishing. However, the state's climate, geology, and significant droughts in recent years have highlighted critical freshwater supply issues throughout this Mid-Atlantic state.

Maryland's eastern and southern counties depend upon groundwater aquifers for their public water supplies, while its central and western counties rely heavily on surface water to meet demands.

PROJECTED GROWTH TAXES SUPPLY

From 1970 to 2010, Maryland's population grew by 47 percent. By 2030, the state's population is projected to grow by more than 20 percent, adding approximately 1.2 million new residents, with much of the growth expected to be concentrated in southern Maryland.

As the population grows, it will put increasing pressure on local water supplies. The state draws nearly 1.4 billion gallons of water each day, half of which is used to meet public supply needs. If Maryland reaches its projected population growth, overall water demand is expected to increase nearly 16 percent by 2030, meaning an additional 233 million gallons in daily withdrawals will be needed.

Population growth is already outpacing available water supplies in many Maryland counties, which have imposed temporary water restrictions and occasionally limit or ban outdoor water use to maintain adequate freshwater supplies.

VULNERABLE AQUIFERS

Aquifers—geological formations of porous rock, soil, or sand saturated with ground water—are among Maryland's most vulnerable freshwater resources. Growing demand increases withdrawals, to the point where water is being pumped at rates faster than the

aquifers can be recharged by annual rainfall and groundwater flow. Recent analyses show Maryland's aquifers declining at an average rate of 1 to 2 feet per year, and projected demand could increase that number to 4 feet. This rising demand could deplete water levels beyond minimum regulatory thresholds and exacerbate water quality concerns, such as saltwater intrusion or pollutant concentrations.

DEVELOPMENTS IN NEED

Water and wastewater infrastructure is critical for new residential and commercial developments, and several expanding Maryland localities are struggling to find safe, accessible, and sustainable water supplies. Because the state will not allow new developments to go forward until adequate water resources are available, counties are considering expensive alternatives, such as searching for undiscovered resources or constructing extensive pipe systems to tap into distant reservoirs.

PHONE (866) WTR-SENS (987-7367) WEBSITE www.epa.gov/watersense EMAIL watersense@epa.gov

EPA EPA-832-F-13-006 June 2013

http://www.epa.gov/watersense/docs/maryland_state_fact_sheet_508.pdf

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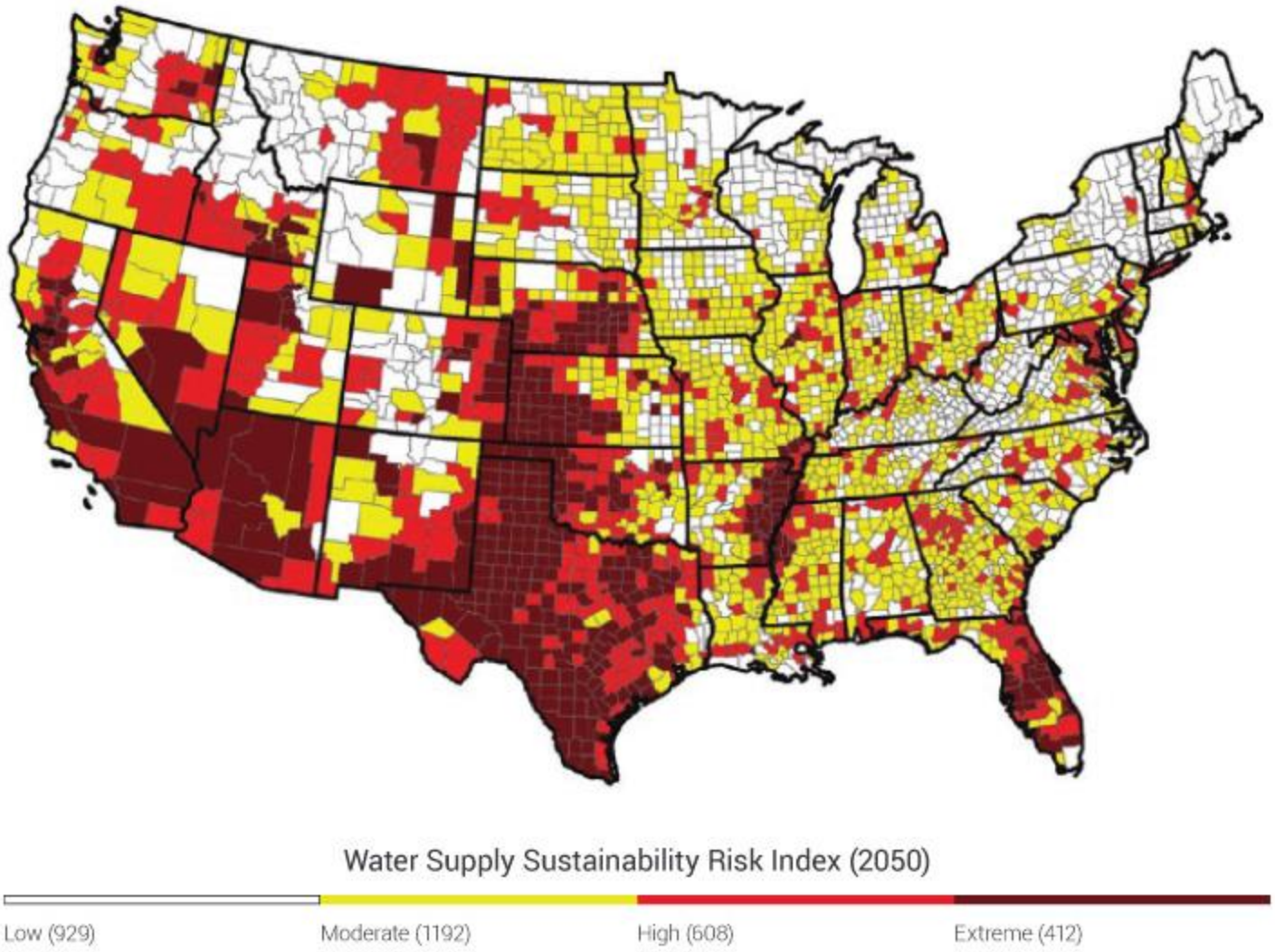
National Climate Assessment Report
Water Sustainability



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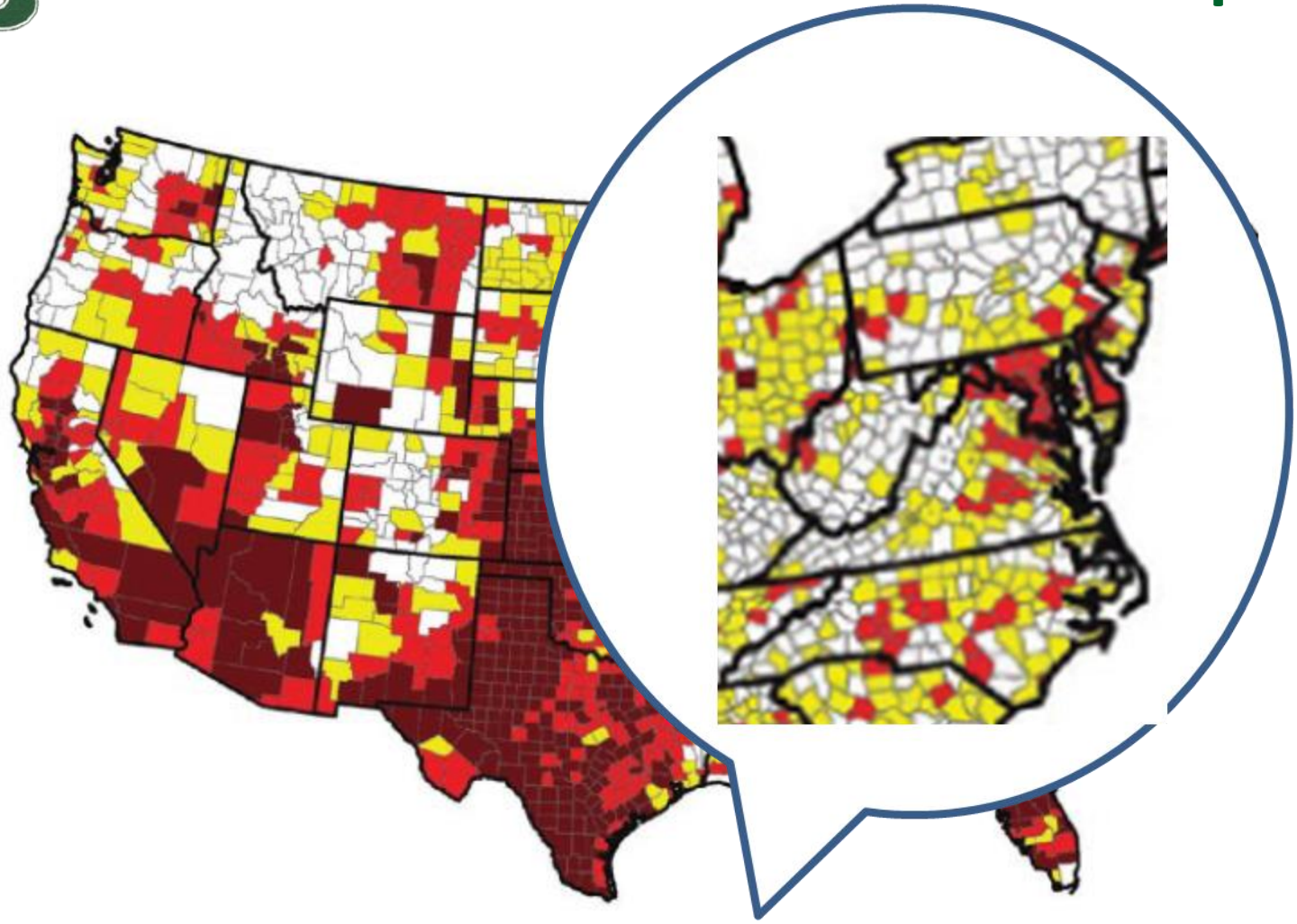

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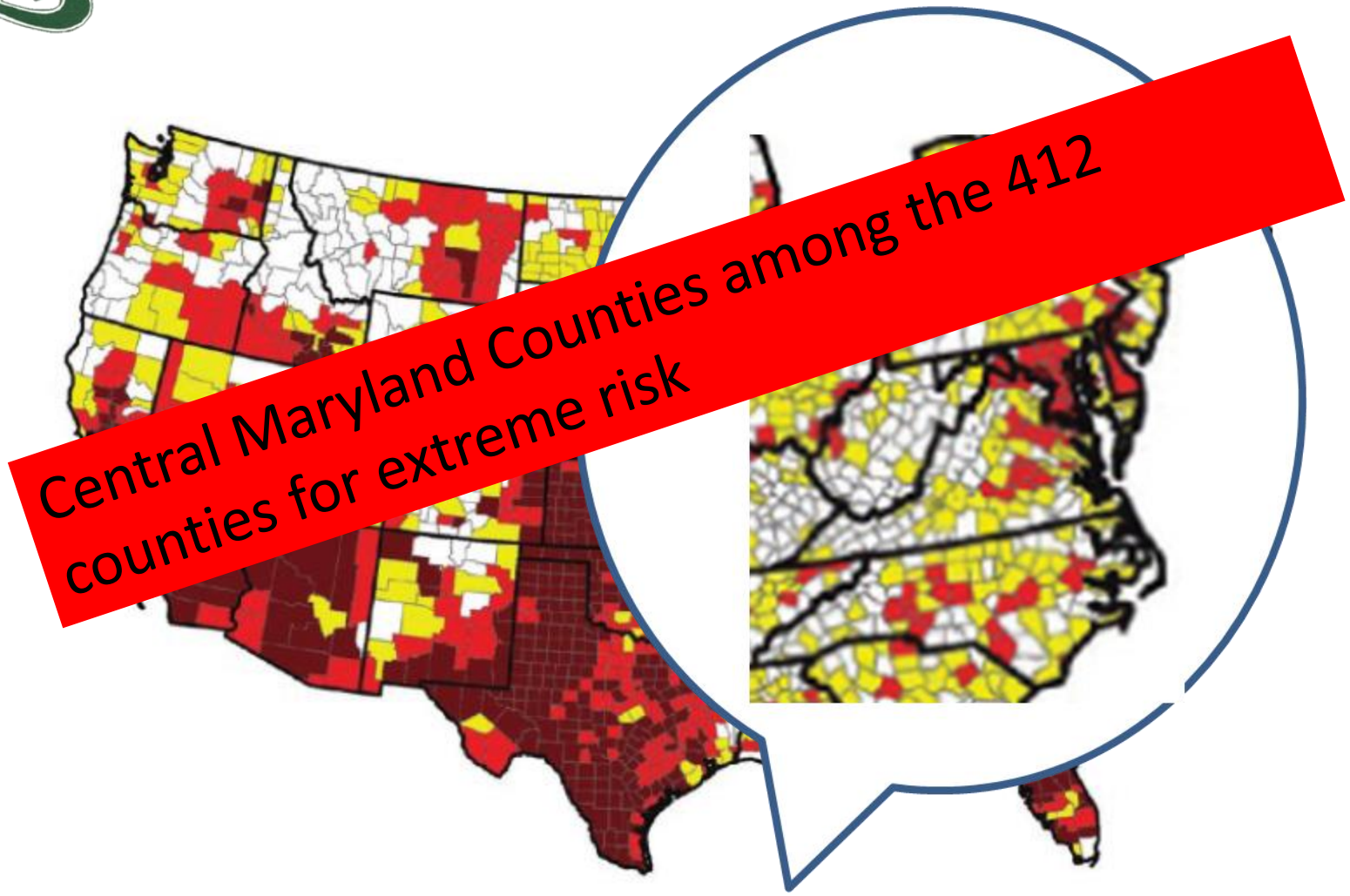
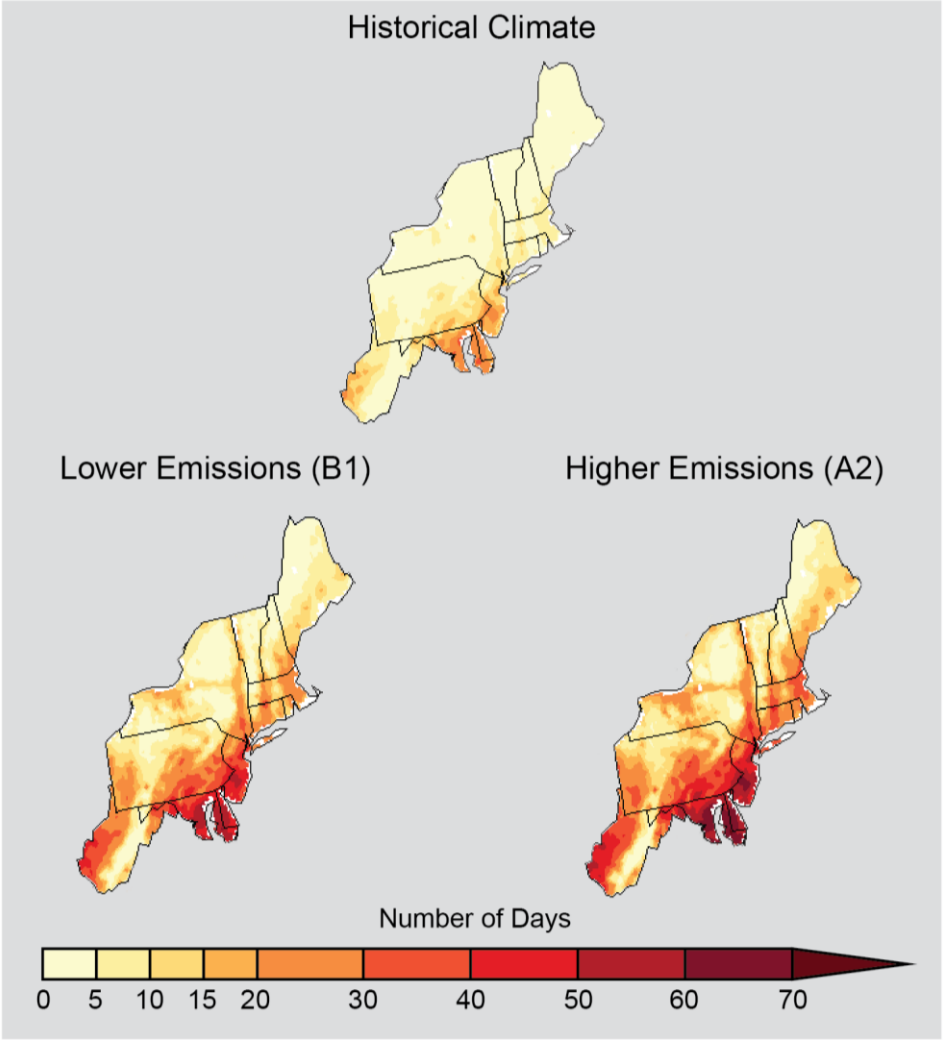


National Climate Assessment

Projected increase in days over 90°

The challenges of understanding climate change effects on groundwater are unprecedented because climate change may affect hydrogeological processes and groundwater resources directly and indirectly, in ways that have not been explored sufficiently. The relation between climate variables and groundwater is considered more complicated compared with the issue of surface water.

http://www.climatescienceandpolicy.eu/2012/07/climate-change-goes-underground-implications-for-groundwater/



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We don't have a clue!

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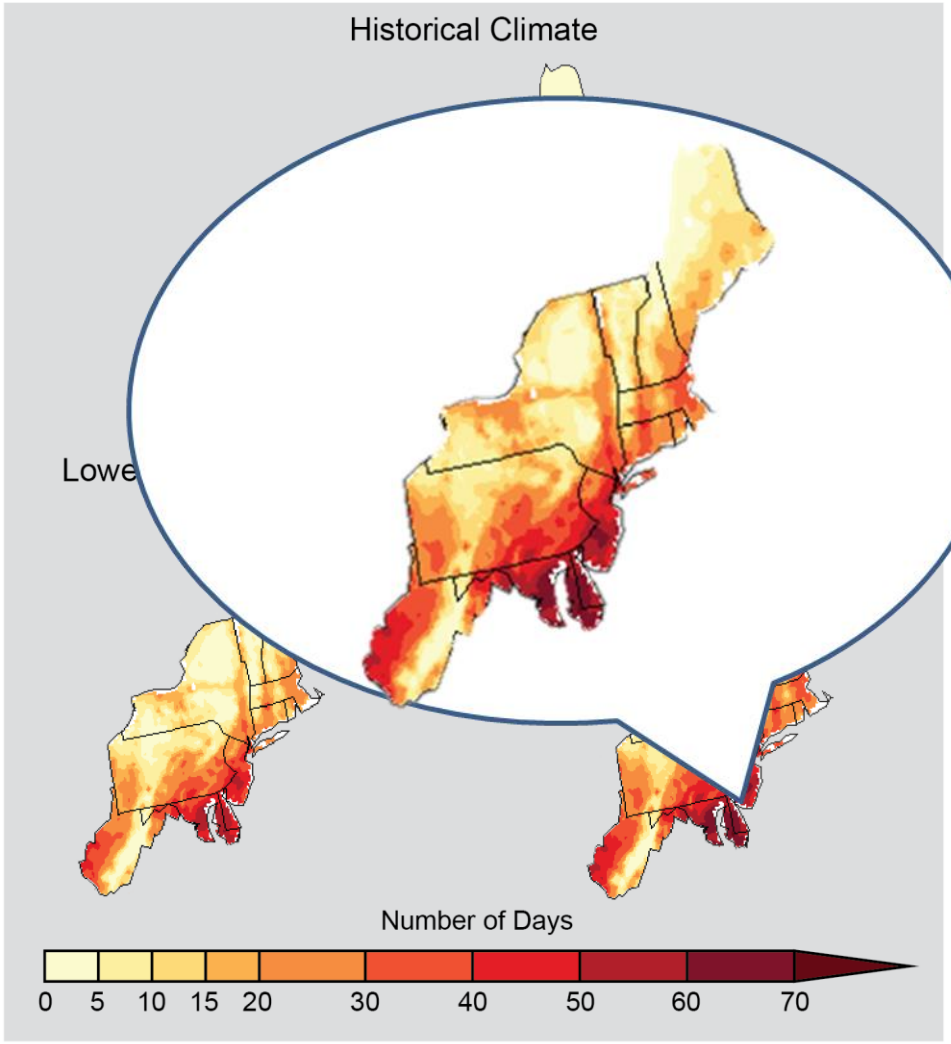

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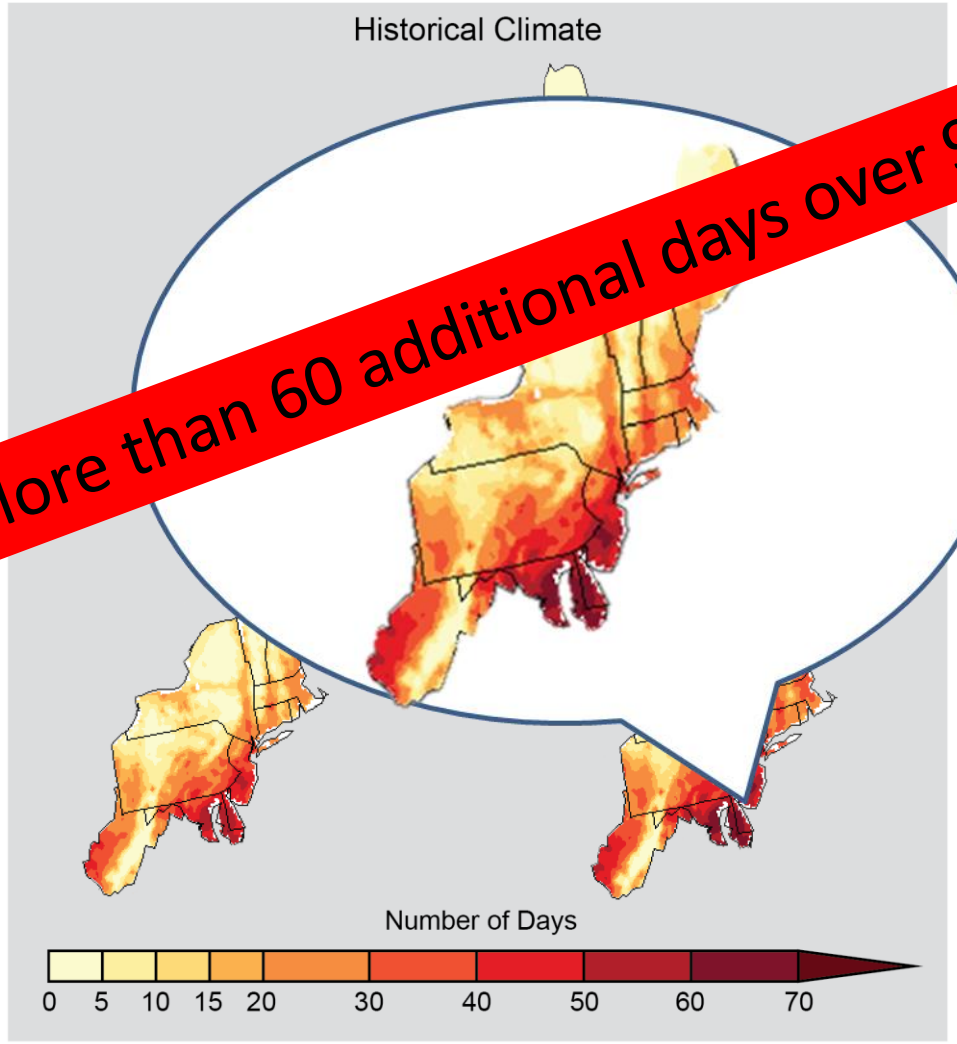
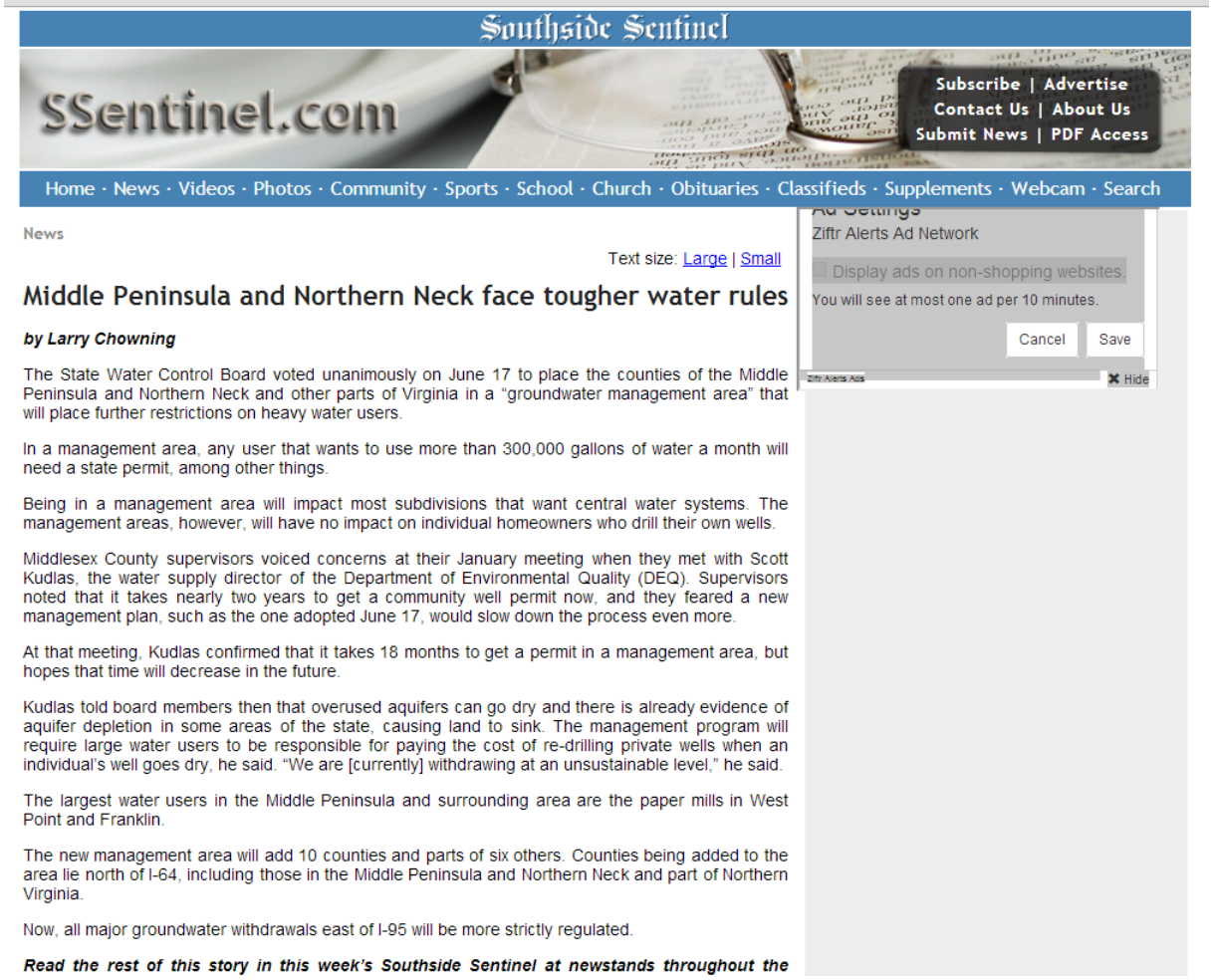
Projected Increases in the Number of Days over 90°F



How would play in Maryland?



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News

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Middle Peninsula and Northern Neck face tougher water rules

by Larry Chowning

The State Water Control Board voted unanimously on June 17 to place the counties of the Middle Peninsula and Northern Neck and other parts of Virginia in a "groundwater management area" that will place further restrictions on heavy water users.

In a management area, any user that wants to use more than 300,000 gallons of water a month will need a state permit, among other things.

Being in a management area will impact most subdivisions that want central water systems. The management areas, however, will have no impact on individual homeowners who drill their own wells.

Middlesex County supervisors voiced concerns at their January meeting when they met with Scott Kudlas, the water supply director of the Department of Environmental Quality (DEQ). Supervisors noted that it takes nearly two years to get a community well permit now, and they feared a new management plan, such as the one adopted June 17, would slow down the process even more.

At that meeting, Kudlas confirmed that it takes 18 months to get a permit in a management area, but hopes that time will decrease in the future.

Kudlas told board members then that overused aquifers can go dry and there is already evidence of aquifer depletion in some areas of the state, causing land to sink. The management program will require large water users to be responsible for paying the cost of re-drilling private wells when an individual's well goes dry, he said. "We are [currently] withdrawing at an unsustainable level," he said.

The largest water users in the Middle Peninsula and surrounding area are the paper mills in West Point and Franklin.

The new management area will add 10 counties and parts of six others. Counties being added to the area lie north of I-64, including those in the Middle Peninsula and Northern Neck and part of Northern Virginia.

Now, all major groundwater withdrawals east of I-95 will be more strictly regulated.

Read the rest of this story in this week's Southside Sentinel at newstands throughout the

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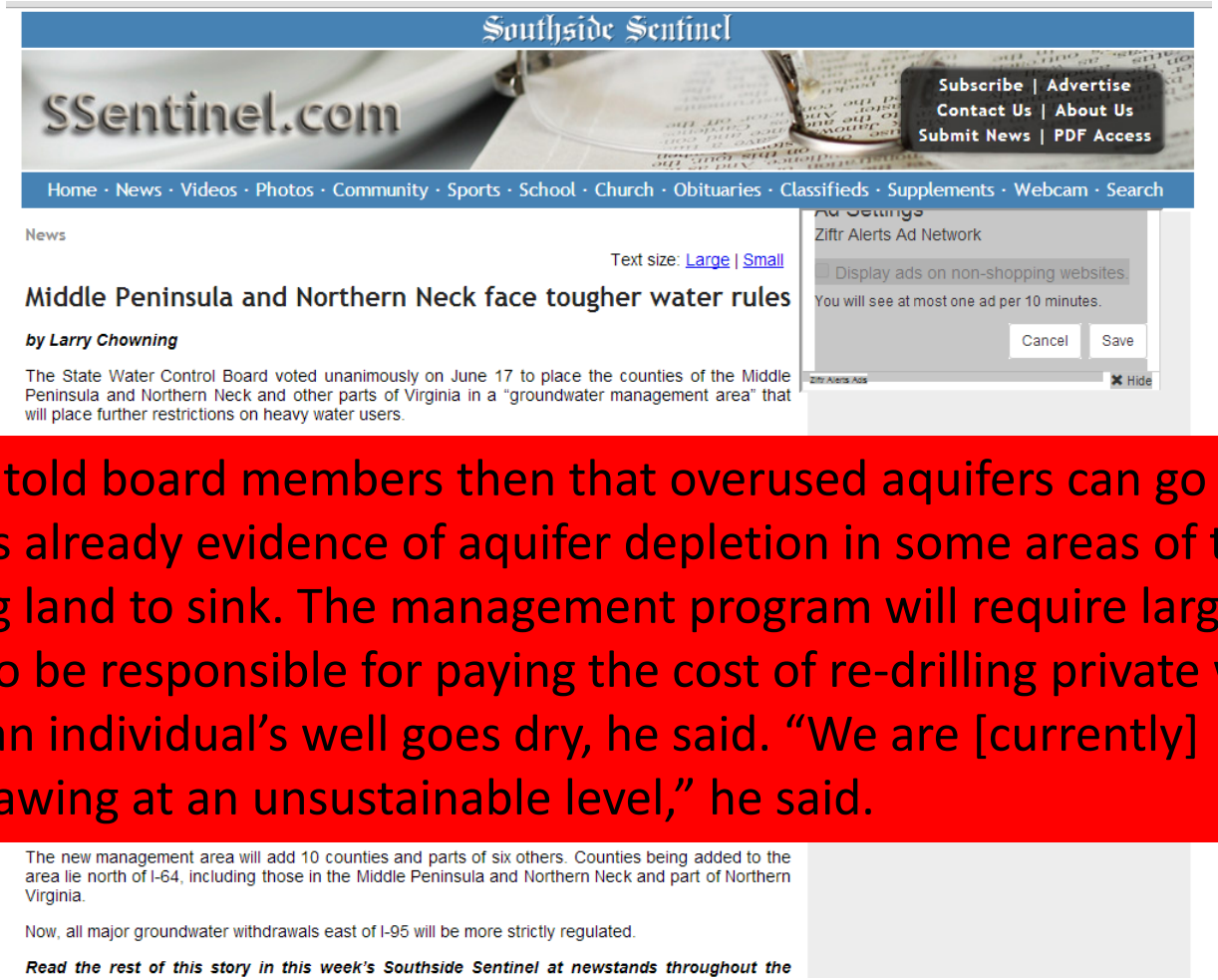

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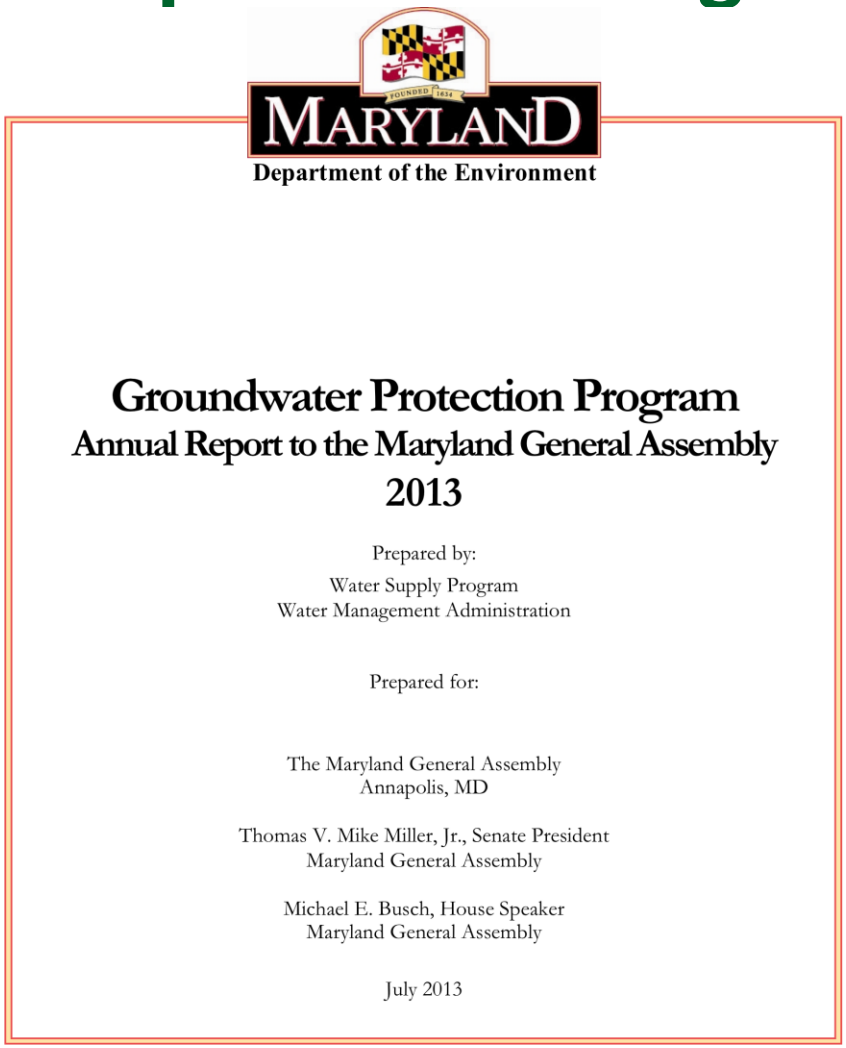
Annual Report to the Legislature



MARYLAND
Department of the Environment

Groundwater Protection Program
Annual Report to the Maryland General Assembly
2013

Prepared by:

Water Supply Program
Water Management Administration

Prepared for:

The Maryland General Assembly
Annapolis, MD

Thomas V. Mike Miller, Jr., Senate President
Maryland General Assembly

Michael E. Busch, House Speaker
Maryland General Assembly

July 2013

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Martin O'Malley, Governor Anthony G. Brown, Lt. Governor Robert Summers, Ph.D., Secretary

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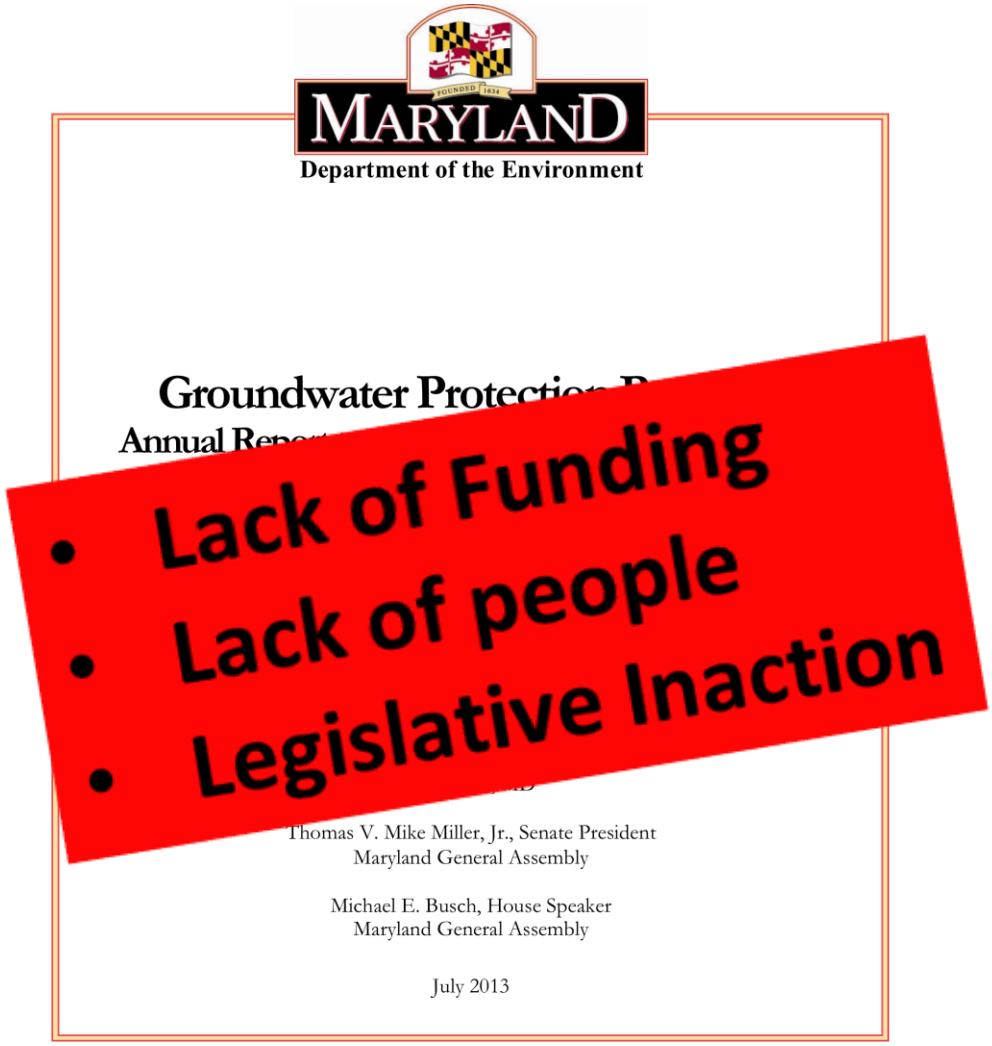

- Lack of Funding
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- Legislative Inaction

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Tonight's Presentations Posted Online

- **www.cepaonline.org**

Some Interesting facts
(based 2005 data)

- Anne Arundel County consumes 35% of the state's groundwater (33 Mgal/d) followed by Charles (8.8 Mgal/d)
- So. MD (CH,SM &CA) consume 17% of states groundwater (16Mgal/d)
- Eastern Shore (DO,KE,QA,WI,WO) irrigation accounts for 26%