



**CHESAPEAKE ENVIRONMENTAL PROTECTION ASSOCIATION
FORUM 2019**

**The Future of Sustainable Water Supply
in Anne Arundel County and Southern
Maryland**

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Water Availability

A Continuing CEPA Theme

- 1990 - 2002 Advocated for establishing – “Advisory Committee on the Management and Protection of the State’s Water Resources”
- 2008 Forum – “Protecting Maryland’s Water Supply”
- 2014 Forum – “About the Future Supply of Drinking Water in Maryland”
- 2019 Forum – “**The Future of Sustainable Water Supply in Anne Arundel County and Southern Maryland**”



Water Use in Anne Arundel

- **Groundwater Aquifers supply 95%**
- **Anne Arundel uses ~30% of MD's groundwater**
- **With So. MD groundwater use rises to ~50%**
- **Nearly 100% of which comes from the confined Coastal Plain Aquifers**
- **~90% is for domestic use, private & public**

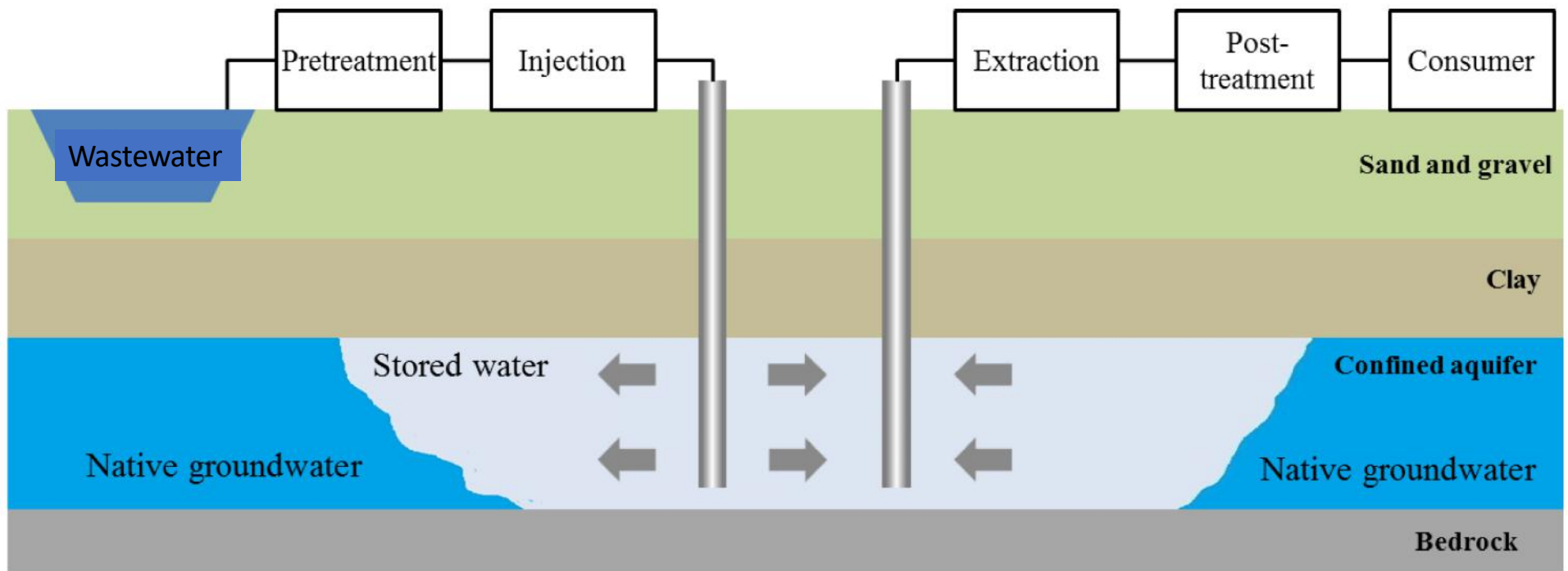


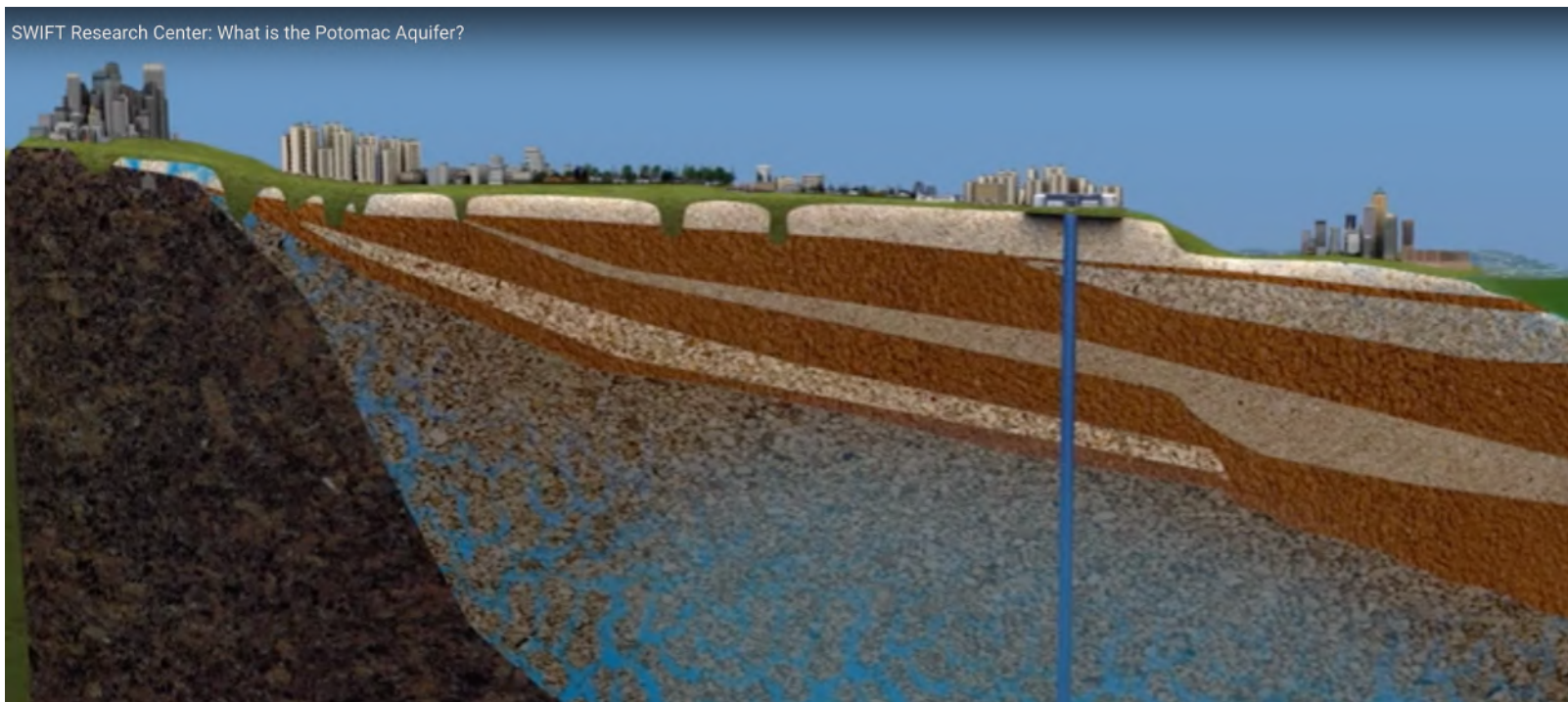
2019 Emerging Groundwater Issues

- **Short Term -**
 - **Saltwater Intrusion**
 - **Land Subsidence**
- **Long Term -**
 - **Aquifer Sustainability (declining levels)**
 - **Account for increased population and climate change**
 - **Integrated Ecosystem Impacts**



Fundamental Concept of Managed Aquifer Recharge





[SWIFT](#)

Tonight's Forum Objectives

- Acquaint you with the technology of managed aquifer recharge
- Does it make economic and environmental sense for Anne Arundel County?
- Can it be implemented in Anne Arundel?

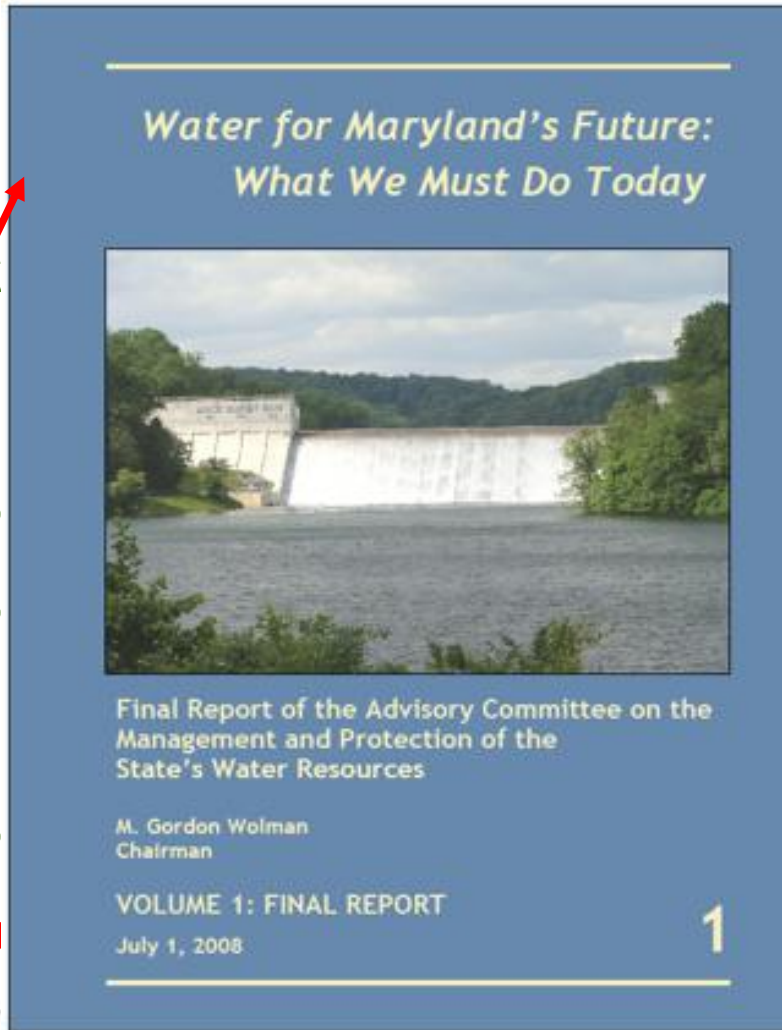




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- 1990 the Ma
- 2008 F
- 2014 F
- 2019 F

Arundel



- Population growth
- Land use trends
- Increase in agricultural irrigation
- Threats to water quality
- Climate change 
- Insufficient data
- Lack of planning
- Lack of investment 

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• 1990 - 2000

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• 2008 Foru

• 2014 Foru

Maryland

• 2019 Foru

Arundel C



- Population growth
- Land use trends
- Increase in agricultural irrigation
- Threats to water quality
- Climate change
- Insufficient data
- Lack of planning
- Lack of investment
- Shrinking state and federal funding
- Complacency

- Security
- Water conflicts among neighbors
- Inadequate regulatory authority
- Aging infrastructure
- Emergency preparedness
- Fracking



Water Availability

A Continuing CEPA Theme

• 1990 - 2000

the Maryland

• 2008 Focus

• 2014 Focus

Maryland

• 2019 Focus

Ground-water issues facing Maryland:

- Declining water levels (Coastal Plain)
- Drought: wells going dry (mostly central Maryland)
- Water-quality problems (private wells untested areas)

Arundel County and Southern Maryland”



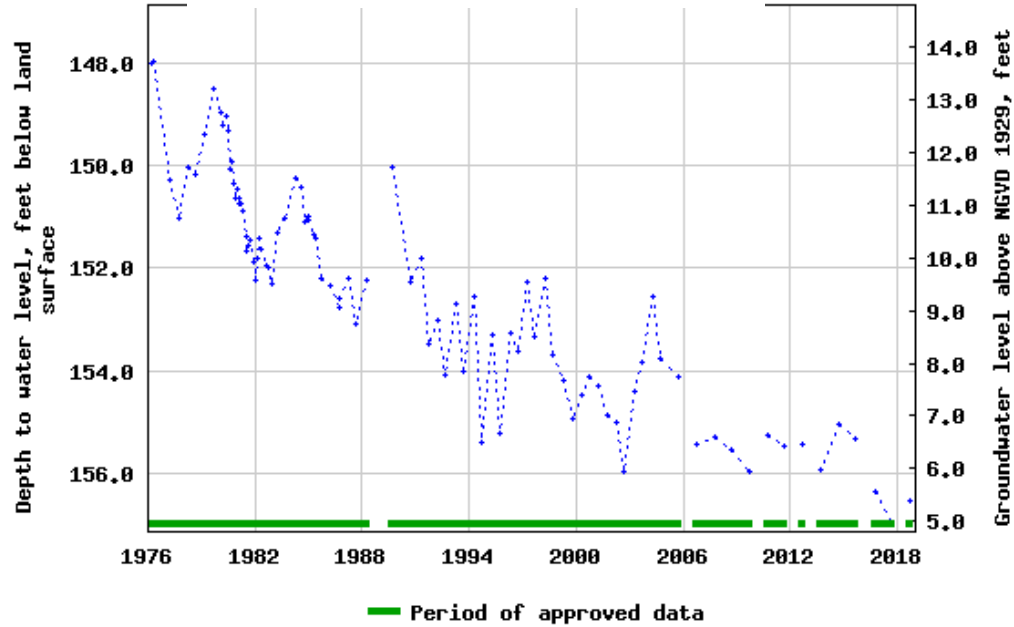
Water Characteristics

Sediments

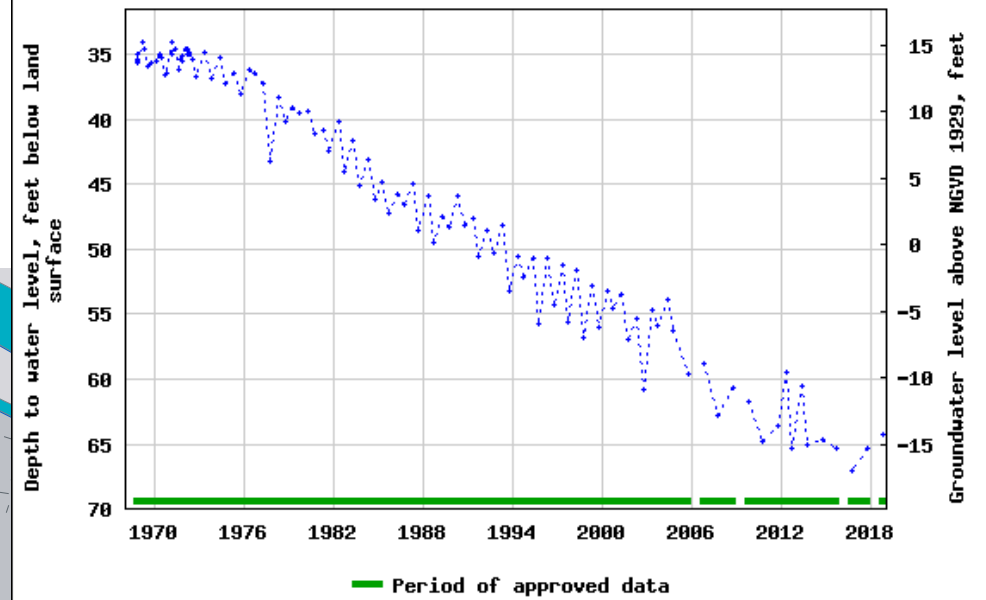
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Severna Park Upper Potomac



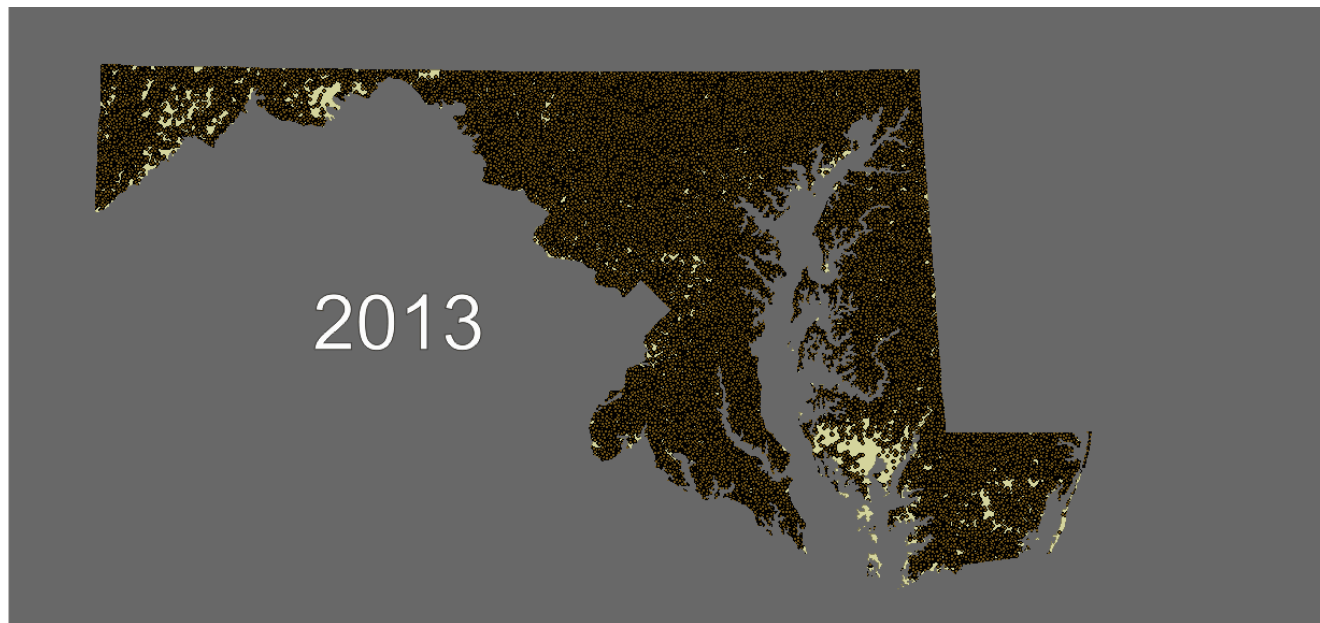
Edgewater Magothy



Consolidated Rock

Not to scale

Growth in number of wells in Maryland, 1945-2013



Growth in Maryland, 1945-2013



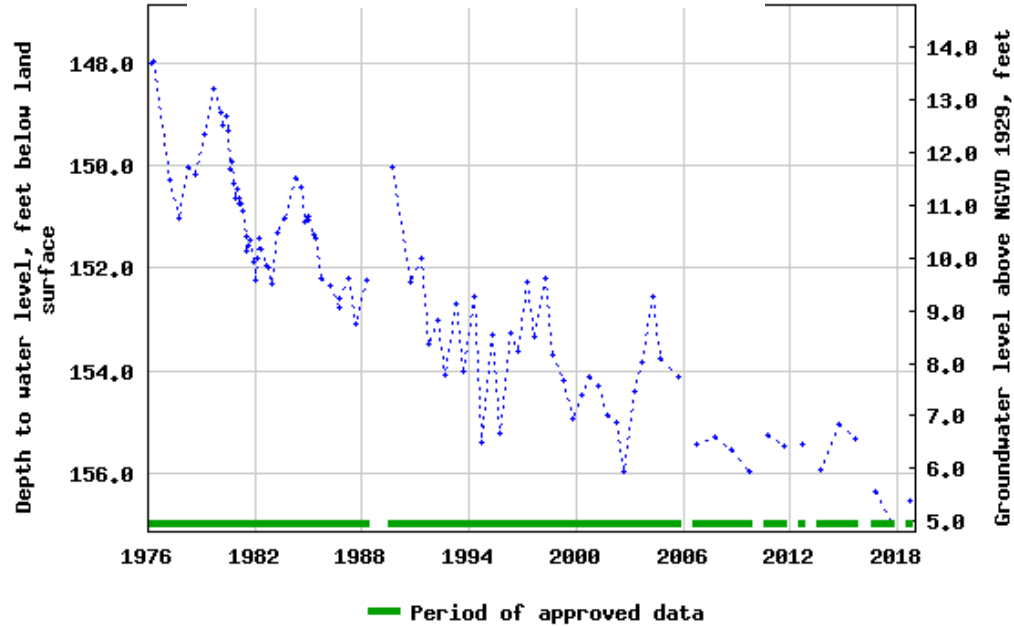
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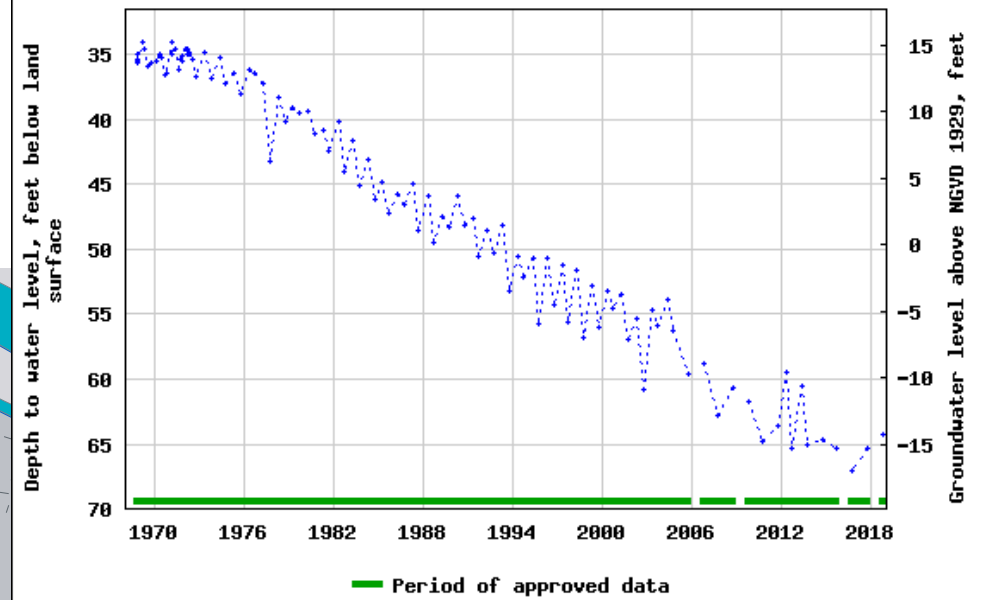
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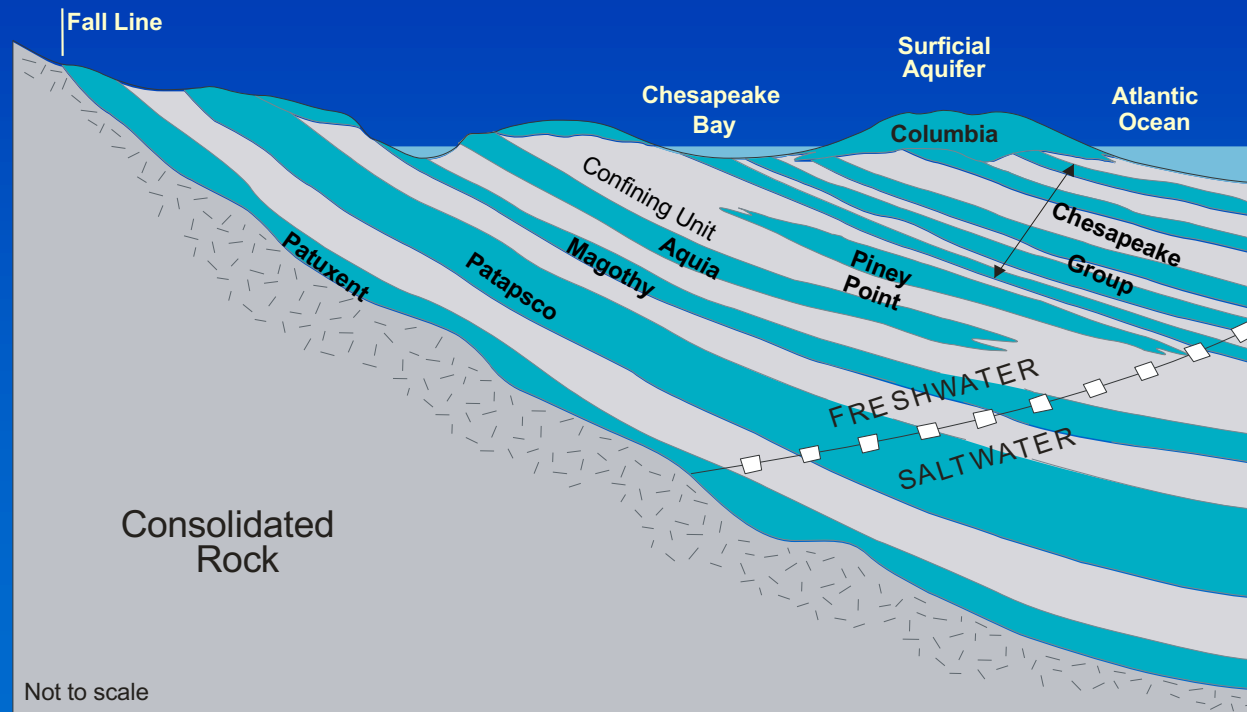


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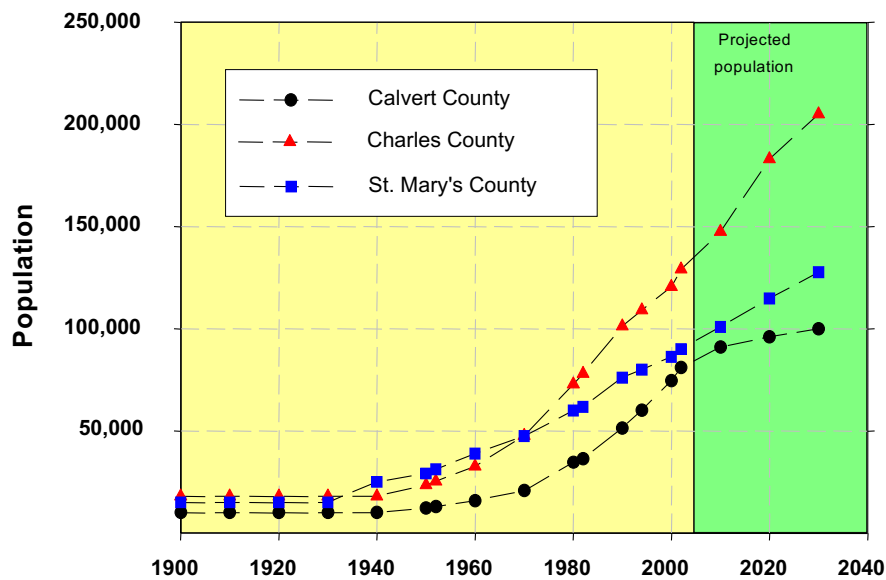
Coastal Plain Ground Water Characteristics

- Unconsolidated sediments
- Confined aquifers
- Usually high well yields



Population Pressures & Declining Water Levels

Historic and projected population in Southern Maryland



Water level in Aquia Formation, St. Mary's County

