

Virginia District Programs in the Northern Shenandoah Valley

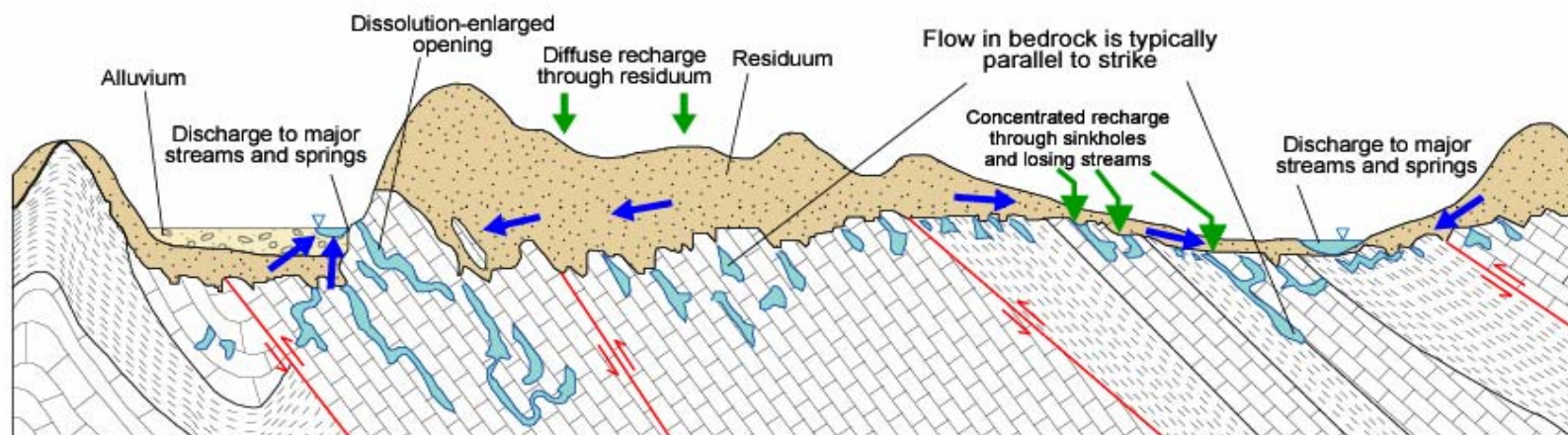


U.S. Department of the Interior
U.S. Geological Survey

Ground-Water Flow System

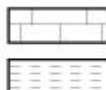
Generalized hydrogeologic section through the Valley and Ridge

(Modified from Wolfe and others, 1997)



APPROXIMATELY 6,000 METERS
Drawing not to scale

EXPLANATION



CARBONATE ROCKS

SILICICLASTIC ROCKS



MAJOR DIRECTION OF GROUND-WATER FLOW

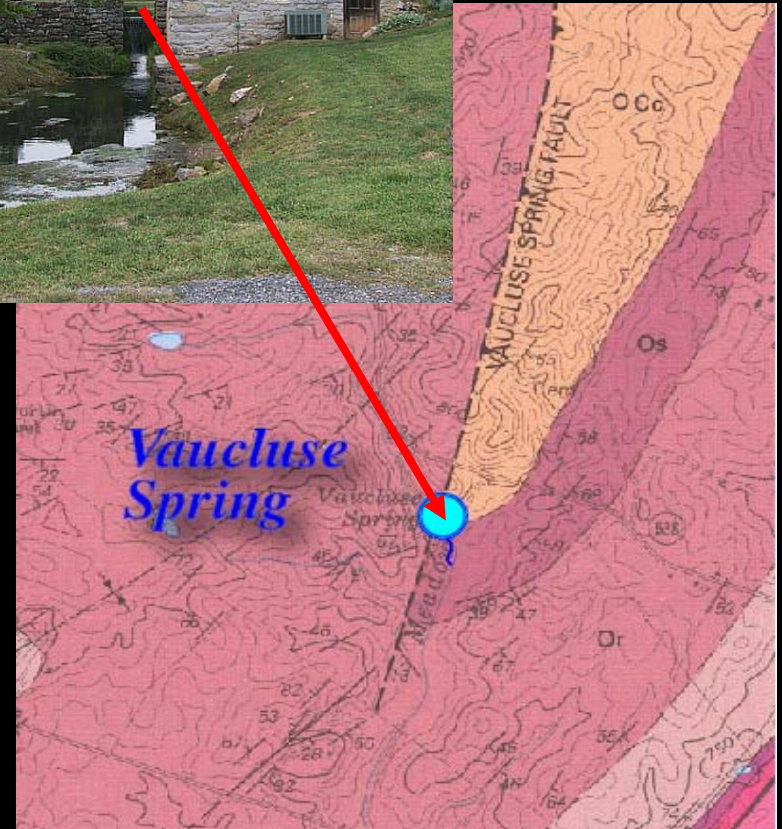
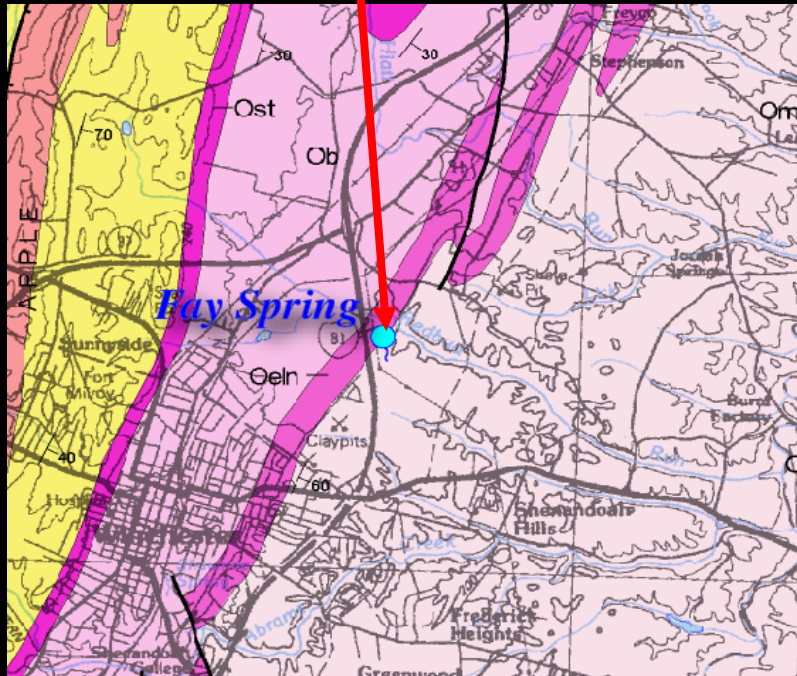


RECHARGE

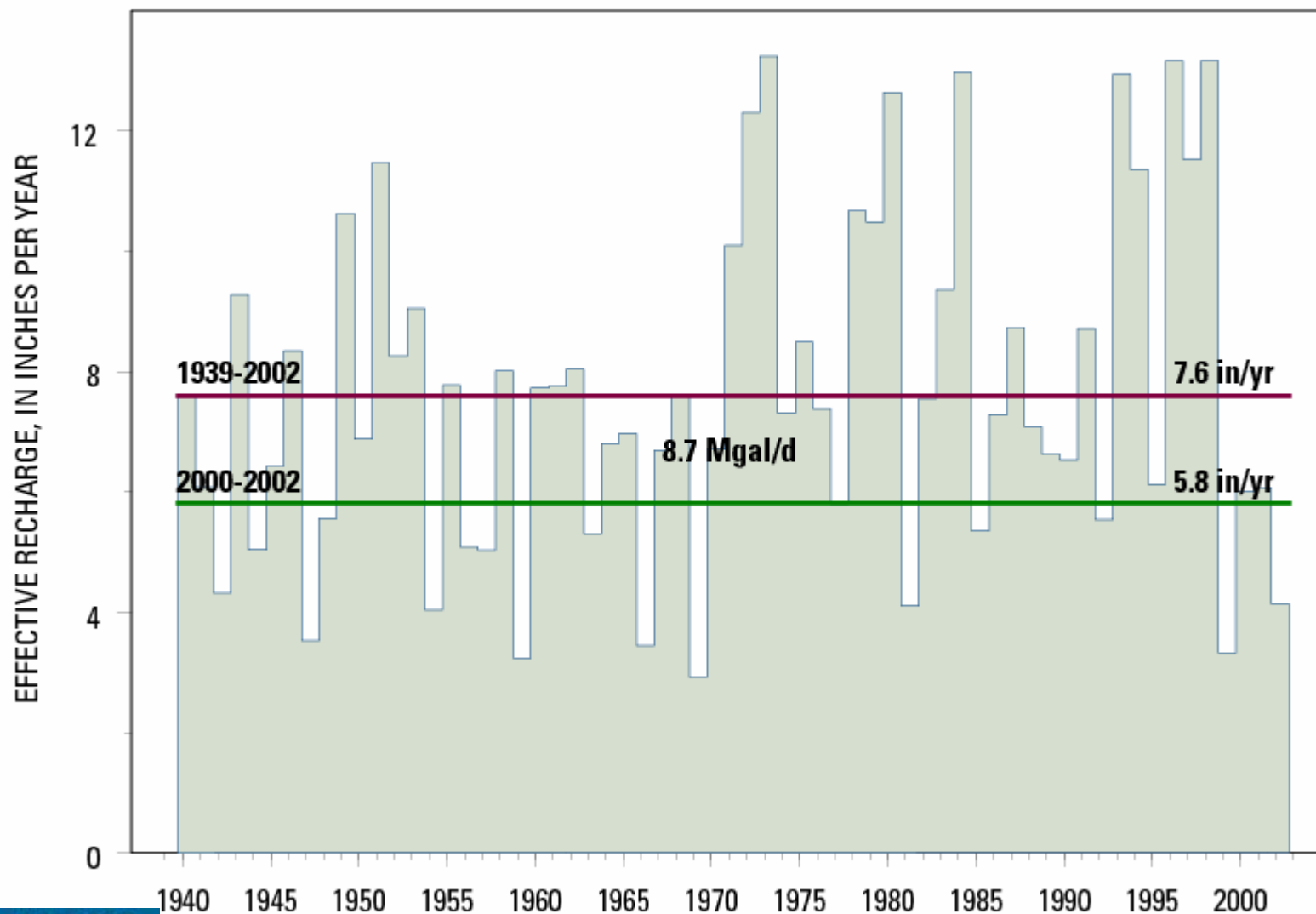


THRUST FAULT

Karst Springs



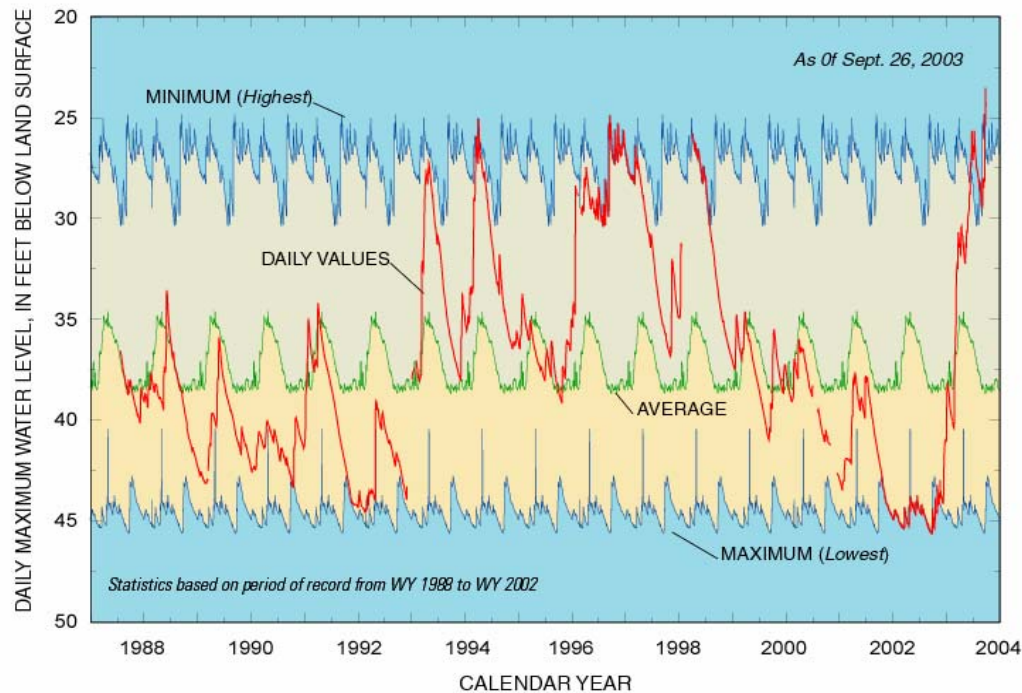
01634500 Cedar Creek near Winchester, Va.
103 square miles



Long-Term Monitoring Program (Ground Water)



USGS Well 46W175
390348078035501
Blandy Farm



PROVISIONAL DATA SUBJECT TO REVISION

Internet Access:

Real Time Water Levels <http://va.waterdata.usgs.gov/nwis/current/?type=gw>



Ground-Water-Level Measurements



Clarke County, Virginia Water-Monitoring Network July 2003

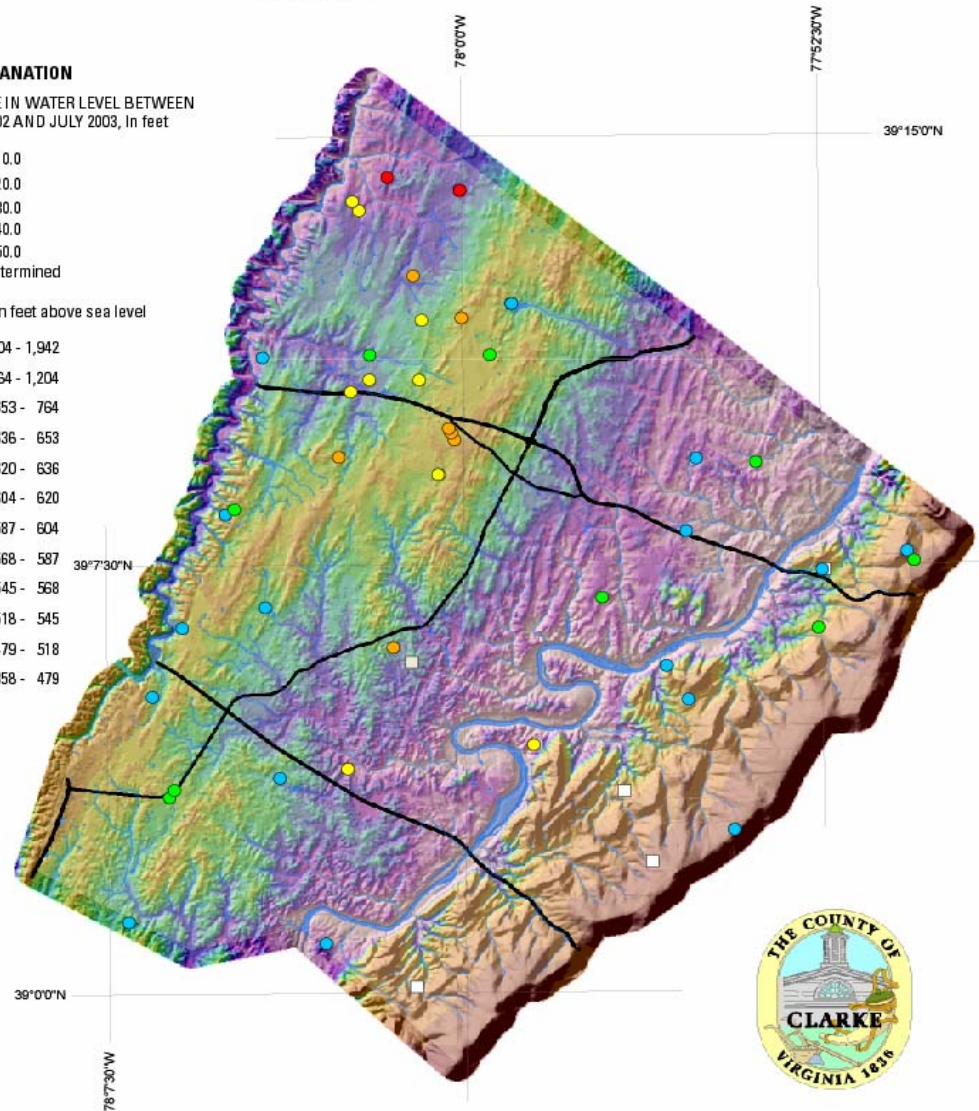
EXPLANATION

NET CHANGE IN WATER LEVEL BETWEEN
OCTOBER 2002 AND JULY 2003, In feet

- 0.0 - 10.0
- 10.0 - 20.0
- 20.0 - 30.0
- 30.0 - 40.0
- 40.0 - 50.0
- Not determined

ELEVATION, In feet above sea level

- 1,204 - 1,942
- 764 - 1,204
- 653 - 764
- 636 - 653
- 620 - 636
- 604 - 620
- 587 - 604
- 568 - 587
- 545 - 568
- 518 - 545
- 479 - 518
- 358 - 479



Project No. 2482-9RP12
October 21, 2003

0 1 2 3 4 Miles

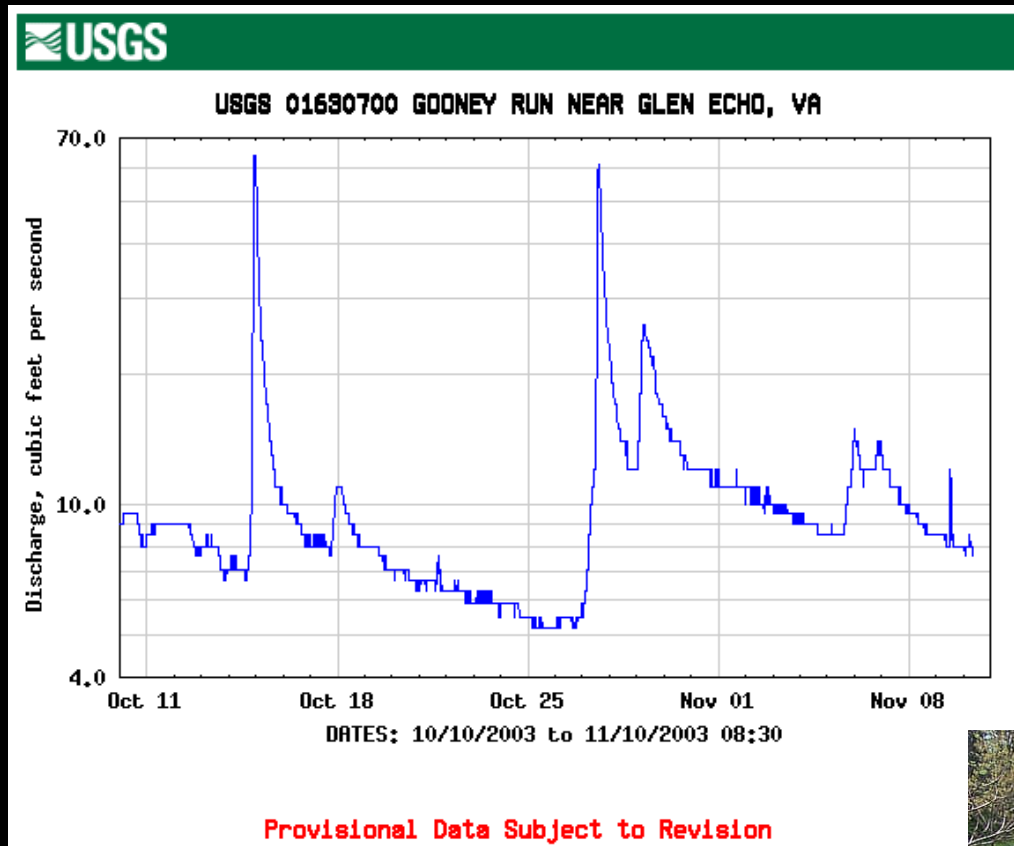
Hydrogeologic Framework



Aerial Photography
1in. : 200ft

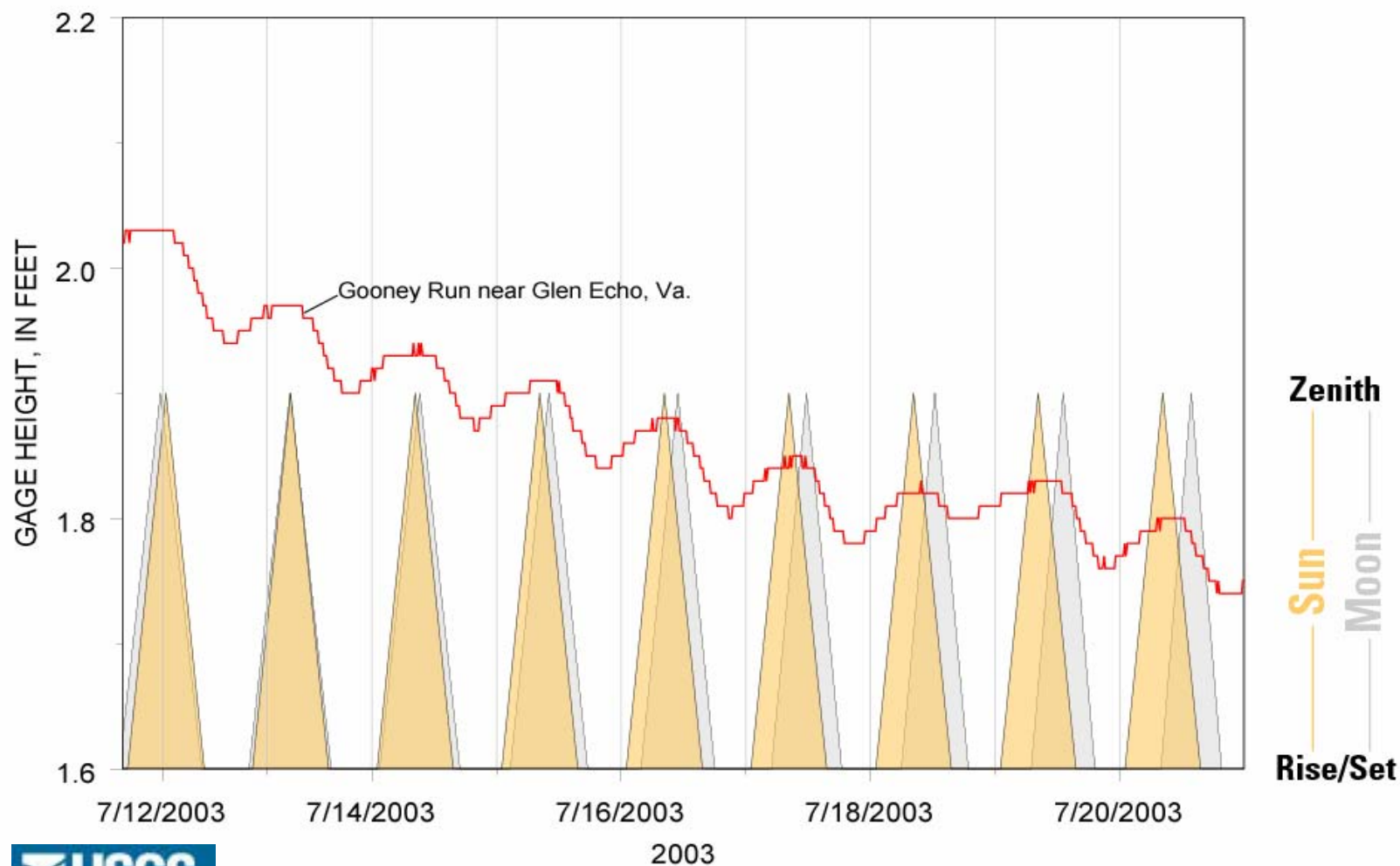


Long-Term Monitoring Program (Streamflow)

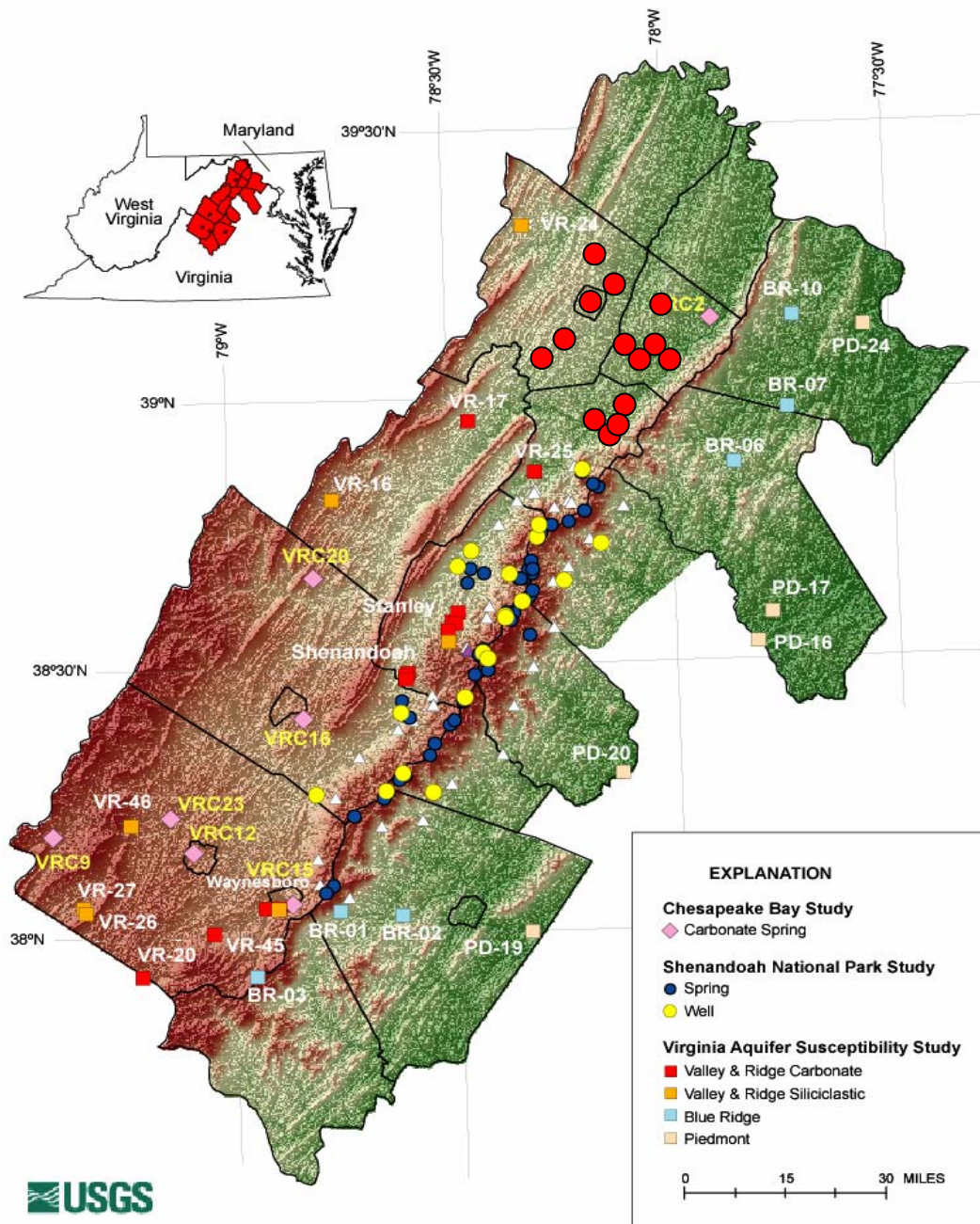


Ground Water/Surface Water Relations

USGS 01630700 GOONEY RUN NEAR GLEN ECHO, VA



Ground-Water Age Dating in the Northern Shenandoah Valley



Internet Sites

- **Water Resources of Virginia**

<http://va.water.usgs.gov/>

- **Frederick County Project**

<http://va.water.usgs.gov/projects/va134.html>

- **Clarke County Project**

<http://va.water.usgs.gov/projects/va146.html>

- **Warren County Project**

<http://va.water.usgs.gov/projects/va142.html>

- **Shenandoah River Minimum Instream Flow Project**

<http://va.water.usgs.gov/projects/va111.html>

- **Great Valley Water-Resources Science Forum**

<http://va.water.usgs.gov/GreatValley/Index.htm>