

DROUGHT MONITORING TASK FORCE

Drought Status Report

November 25, 2008

Statewide precipitation for the previous water year (October 1, 2007 through September 30, 2008) was in the normal range (85% of normal). Statewide precipitation for the period from October 1, 2006 through November 25, 2008 was below normal (79% of normal). Statewide precipitation for the period from January 1, 2008 through November 25, 2008 was below normal (83% of normal). Precipitation greater than 85% of normal is considered to be in the normal range. Statewide precipitation for the current water year (from October 1 through November 25) was below normal (61%), with below normal precipitation in the following drought evaluation areas: Big Sandy (63%), Chowan (56%), Middle James (64%), New River (48%), Northern Piedmont (62%), Roanoke (70%), Shenandoah (65%), Upper James (59%), and York James (82%). Following an extremely dry month of October (statewide 42%), conditions improved in the eastern coastal areas of the Commonwealth during the month of November, however, below normal rainfall occurred in the following areas: Big Sandy (75%), Middle James (82%), New River (67%), Northern Virginia (60%), Shenandoah (66%), and Upper James (70%). The following drought evaluation regions are currently below normal for the period beginning October 1, 2006; Big Sandy (72%), New River (77%), Roanoke (78%), Upper James (79%), Middle James (83%), Northern Piedmont (81%), Chowan (82%), Northern Coastal Plain (80%) and York-James (74%). Cumulative precipitation deficits for the period beginning October 1, 2006 varied +/- 2% since the last report. The Eastern Shore, Northern Virginia, Shenandoah, and Southeast Virginia drought evaluation areas are currently in the normal range of precipitation for the extended period from October 1, 2006 to November 25, 2008. Appendix A contains precipitation tables for periods dating from October 1, 2006 provided by the Climatology Office of the University of Virginia and the Virginia Department of Environmental Quality. The monthly climatologic outlook calls for equal chances of below normal, normal and above normal temperatures and precipitation for the Commonwealth through December of 2008. The three month outlook calls for equal chances of below normal, normal and above normal temperatures for the Commonwealth through February 2009. The three month outlook calls for equal chances of below normal, normal and above normal precipitation for most of the Commonwealth, with the southern quarter of the state having the chance for below normal precipitation for the same period.

The latest NOAA drought monitor indicates significant some small decreases in the abnormally dry category of drought conditions in the Commonwealth since the last report. The areas of severe and moderate drought remain largely unchanged. About one half of the Commonwealth is currently experiencing drought conditions that range from abnormally dry to severe drought. The western half of the Commonwealth as well as a narrow strip in southeastern Virginia along the North Carolina border is currently experiencing drought conditions. The drought monitor is included as Appendix B. Appendix C contains information from the national drought monitor with only Virginia displayed. The NOAA seasonal drought outlook through February 2009 indicates that drought conditions are likely to improve in the areas of western Virginia currently experiencing drought. However, given the lack of a strong La Nina or El Nino pattern developing, there is not a high level of confidence for this long range seasonal outlook. The seasonal drought outlook is included as Appendix D.

While the Virginia Department of Health has not reported any impacts to public water supplies that have compromised their ability to provide the needs of their customers', 48 systems have initiated voluntary water conservation requirements and 3 systems have initiated mandatory water conservation requirements. Water conservation requirements at public water supplies have decreased slightly since the last report when 46 systems were on voluntary restrictions and 5 systems required mandatory conservation. Appendix E contains a table of waterworks that includes systems that have initiated water conservation requirements. The VA Emergency Operations Center, through the VDEM Region 4 Coordinator, is monitoring a possible water shortage situation developing in the town of Big Stone Gap. On 20 November, 2008, VDEM Region 6 Coordinator reported that Big Stone Gap had a little over a two month supply of water and has asked citizens to voluntarily conserve water.

The Virginia Department of Forestry reports very light fire activity over the last month due to precipitation related to the two topical systems.

The Department of Game and Inland Fisheries reports that with the recent rain events, there has been a slight improvement in spring levels at the trout hatcheries, however all hatcheries are still experiencing below normal spring flows. Most rivers and streams in the western portion of the state continue to be critically low, but the cooler air temperatures have made it possible to stock trout in the larger category "A" waters. There is not sufficient streamflow, and many have no water for stocking, in the smaller "B" and "C" streams. Several boat access sites across the state have either no water or low water conditions and boaters should check our web site HuntFishVA.com before attempting to launch.

Reports from the Climatology Office of the University of Virginia, the National Weather Service, the Virginia Department of Environmental Quality, the United States Geological Survey, and the Virginia Department of Agriculture and Consumer Services, follow.

Report of the Climatology Office of the University of Virginia

Several times during the last thirty days, the Commonwealth has received rainfall associated with frontal passages and storm systems. Some of these events have covered a fairly large area, but many have brought moisture to relatively few Virginians. The primary recipients have been the Southeast and Eastern Shore regions, while Northern Virginia and areas west of the Blue Ridge have generally received considerably less. Between these events, high pressure systems have built in over the state and helped to suppress precipitation.

The season for tropical systems has ground to a halt, with no real prospects for future development this year. Despite the overall active nature of the hurricane season (as had been forecast), the impact upon Virginia has been comparatively slight. No moisture associated with these systems has been received since early September. This has certainly helped make the last two-and-a-half months a very dry period.

For the next several months, the dominant precipitation provider to the Middle Atlantic states will be the temperate cyclone (winter storm) with associated frontal passages. Should the normal (plentiful) supply of these pass over the Commonwealth between now and the start of the growing season next year, the likelihood of substantial improvements in deep soil and groundwater conditions is high.

The cold half of the year, with evaporation and water use by plants at their low points, provides the window of opportunity to make these moisture gains. Should there be a shortfall in the number of winter storms (such as seen during the 1999–2002 drought), current moisture deficits may well be carried over to next year's growing season.

Report of the National Weather Service

Rainfall totals in November averaged near normal to below normal at most locations across the Commonwealth. A couple of relatively significant rain events occurred around November 5th and 13th which were enough to sustain soil moisture conditions so far. A cold front will approach from the west and cross the area early this week (11/24). This frontal system will likely produce between one-quarter to one-half inch of rain by Tuesday morning (11/25). High pressure will then build in from the west-southwest on Wednesday night and Thursday with dry weather expected. Another front will affect the region late in the week, Friday (11/28) into Saturday (11/29) triggering rain showers as it moves east. Early rainfall estimates are expected to be near one-quarter inch at this time.

The 8-14 day outlook for precipitation calls for below normal rainfall across the the Commonwealth but above normal across southwest Virginia. Normal temperatures are expected during the period. The NOAA 30-day outlook calls for near normal precipitation and the 90-day outlook calls for below normal rainfall.

United States Geological Survey Streamflow and Ground Water Levels

Seven day average streamflows for November 21 are generally below normal in the western half of the Commonwealth with conditions indicative of severe hydrologic drought (< 5th percentile) in the upper Roanoke River basin. Some Statewide precipitation last week, cooler temperatures, and reduced evapotranspiration have allowed streamflows to improve slightly over conditions observed last month. In spite of the increased streamflows, November flow statistics are generally higher than October streamflows so the increased precipitation had little effect on the percentile classification. Streamflow conditions are still below normal along the Blue Ridge Physiographic Province and in the Valley and Ridge Province from North Carolina to West Virginia. Dry conditions extend eastward to the Roanoke River Basin and the western portion of the Chowan River Basin in the southern Piedmont Province. Streamflows in the central and northern Piedmont and Coastal Plain Physiographic Provinces generally are in the normal range of flows. Ground-water levels show similar drought conditions across the State. Ground-water levels in the Coastal Plain and northern Piedmont Physiographic Provinces generally are in the normal range of observed values. Ground-water levels in the central Piedmont and Valley and Ridge Physiographic Provinces generally are in the well below normal range of observed values.

Streamflow conditions based on daily values for November 20 are presented in Appendix F. Area summaries of 7-day average streamflows from the USGS drought watch web page show similar flow conditions and are presented in Appendix G. Ground water levels based on conditions on November 20 are presented in Appendix H.

Virginia Department of Environmental Quality Condition of Major Reservoirs

Levels of large reservoirs in the western portion of the Commonwealth continue to decline. Water surface elevations of major reservoirs in northern and eastern Virginia are mostly normal. Southwestern reservoirs continue to hold lower than normal volumes of water and are generally worse off than a year ago. Lake Moomaw on the Jackson River has only 7.2% of its conservation storage. The lake lost 4.8% of its storage in the past month. The reservoir is seriously low, about 9% lower than it was at this time last year and close to the all time record low of 3% in December of 1999. A reduced release schedule (100 cfs) has been in effect for a month. Inflows are averaging about 45 cfs. Smith Mountain Lake is 3.6 feet below full pond about the same as last month. The lake is about 1.7 feet lower than it was at this time a year ago. Reduced releases have been in effect since mid-July. The lake and inflows are at a seriously low level and only the bare minimum release of 350 cfs is currently being made as opposed to a normal minimum release of 650 cfs. Philpott Lake is 9.5 feet below the guide curve, having lost a foot in the past month. Energy production is being transferred from Lake Philpott to Kerr Reservoir in order to help the lake level recover. This means only half of the normal release is being made to the Smith River. So far no adverse effects of the reduced release have been reported. In the extreme southwestern part of the State, South Holston Lake, straddling the Tennessee – Virginia line is 24 feet below its guide curve. The two major reservoirs for the Roanoke area Carvins Cove and Spring Hollow Reservoirs are 10.5 feet and 41 feet below full, respectively. Conditions improve to the north and east. Lake Anna is in fair shape 0.6 feet below full. The often vulnerable Rivanna Water and Sewer Authority reservoirs serving Charlottesville water supply are 99% full. Due to careful management and moderate precipitation Kerr Reservoir remains near the guide curve at 297 feet. The project continues to release the minimum amount of water necessary to fulfill its energy contracts. October inflows were the fourth lowest in a 77 year period of record. To date, November inflows are not much better.

Virginia Department of Agriculture and Consumer Services Status of Agricultural Drought

According to the USDA Crop Weather Report released for the week ending November 23, 2008, 32% of topsoil moisture ranged from short to very short. The rainy week in some areas of the state helped to replenish soil moisture, while other parts of the state continued to suffer from dry conditions.

Thirty-six counties have requested the Governor's assistance in obtaining federal agricultural disaster designation due to drought conditions. On October 15, 2008, United States Secretary of Agriculture Ed Schafer named eleven of the localities primary disaster areas due to drought and excessive heat: Amelia, Amherst, Bedford, Campbell, Dinwiddie, Halifax, Louisa, Nelson, Nottoway, Pittsylvania, and Prince Edward. Governor Kaine has sent letters to Secretary Schafer requesting disaster designation for an additional twenty-one localities: Albemarle, Brunswick, Buckingham, Caroline, Charlotte, Fluvanna, Franklin, Gloucester, Goochland, Greene, Hanover, Henry, Isle of Wight, Lunenburg, Mecklenburg, Patrick, Prince George, Powhatan, Rockbridge, Scott, and Surry. FSA is in the process of preparing the loss assessment reports for another four localities: Craig, King and Queen, King William, and Russell.

Impact on Crops

VDACS staff reports that hay crops are average in yield and moderate in quality. At this time, there are no hay shortages in most areas of the state. Row crops are still being harvested and conditions continue to vary around the state. Dry conditions have created favorable conditions for the fall harvest and planting seasons. Some areas, such as Augusta County, have been especially hard hit this year with poor yields of corn and corn silage, as well as poor to no second cutting of hay. Recent rains have helped fall crop germination rates. In the south central region of Virginia, late soybeans are not worth harvesting. Overall, the growing season has been worse than average. Overall moisture conditions are pretty good at this time. Small grain crops appear to be doing well overall.

Impact on Nursery/Horticulture

At this time, the nursery industry appears to be experiencing minimal impact from the recent dry spell. However, growers could encounter losses if the dry conditions persist.

Impact on Livestock and Dairy Industry

VDACS staff reports that throughout the Shenandoah Valley region, most dairymen have adequate feed. Dairymen around the Mount Jackson area in Shenandoah County report that they had an excellent growing year. Farms in the northern Valley area had good growing seasons as well. Farms from Augusta County and south had what is considered to be an average season. The corn grain and silage crops are reported to be good quality, with good feeding value. With the decline in the costs of fuel, dairymen are becoming more optimistic about the immediate future.

In Franklin, Bedford, Pittsylvania and Campbell counties, a new mixture of winter oats and Austrian peas have been planted on a number of farms for green chopping to extend the feed supply for cows.

There has been little change in condition and numbers at the livestock markets. Some herds continue to be thin due to previous feed shortages and the poor economy. Stored feed appears adequate for most farmers for this time of year. However, in some localities rainfall was not adequate for good fall pasture growth or stockpiling and pastures are drought stressed. In other areas, pastures have received sufficient rainfall and are in better shape than they have been since spring of this year.

Staff reports that horse owners are very nervous about the cost of hay, grain, and fuel. Horses are not selling well, and attendance at equine events, as well as participation in equine activities, is down considerably. Equine establishments are laying-off staff.

APPENDIX A

Precipitation departures by Drought Evaluation Region.

PRELIMINARY PRECIPITATION
SUMMARY

Prepared:
10/23/08

		1-Nov-08	- Nov 25, 2008		% OF
REGION	OBSERVED	NORMAL	DEPARTURE	NORM.	
1	Big Sandy	2.87	3.59	-0.72	80%
2	New River	2.1	3.45	-1.35	61%
3	Roanoke	3.44	3.7	-0.26	93%
4	Upper James	3.04	3.65	-0.61	83%
5	Middle James	3.7	3.89	-0.19	95%
6	Shenandoah	3.54	3.52	0.02	101%
7	Northern Virginia	5.02	3.69	1.33	136%
8	Northern Piedmont	4.17	4.01	0.16	104%
9	Chowan	2.91	3.62	-0.71	80%
	Northern Coastal				
10	Plain	4.5	3.57	0.93	126%
11	York-James	4.28	3.64	0.64	118%
12	Southeast Virginia	4.62	3.55	1.07	130%
13	Eastern Shore	4.66	3.32	1.34	140%
	Statewide	2.32	2.76	-0.44	84%

		1-Oct-08	- Nov 25, 2008		% OF
REGION	OBSERVED	NORMAL	DEPARTURE	NORM.	
1	Big Sandy	3.59	5.73	-2.14	63%
2	New River	2.81	5.8	-2.99	48%
3	Roanoke	4.49	6.45	-1.96	70%
4	Upper James	3.55	6.06	-2.51	59%
5	Middle James	4.3	6.74	-2.44	64%
6	Shenandoah	3.83	5.89	-2.06	65%
7	Northern Virginia	5.27	6.27	-1	84%
8	Northern Piedmont	4.3	6.97	-2.67	62%
9	Chowan	3.51	6.28	-2.77	56%
	Northern Coastal				
10	Plain	5.55	6.17	-0.62	90%
11	York-James	5.11	6.26	-1.15	82%
12	Southeast Virginia	5.38	6.27	-0.89	86%
13	Eastern Shore	5.13	5.7	-0.57	90%
	Statewide	3.79	6.26	-2.47	61%

1-Sep-08 - Nov 25, 2008

REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1 Big Sandy	4.77	9.19	-4.42	52%
2 New River	3.54	9.21	-5.67	38%
3 Roanoke	7.32	10.68	-3.36	69%
4 Upper James	4.43	9.56	-5.13	46%
5 Middle James	7.54	10.87	-3.33	69%
6 Shenandoah	5.06	9.56	-4.5	53%
7 Northern Virginia	9.44	10.34	-0.9	91%
8 Northern Piedmont	7.28	11.25	-3.97	65%
9 Chowan	7.06	10.71	-3.65	66%
Northern Coastal				
10 Plain	8.01	10.26	-2.25	78%
11 York-James	6.87	11.16	-4.29	62%
12 Southeast Virginia	8.43	10.7	-2.27	79%
13 Eastern Shore	6.56	9.31	-2.75	70%
Statewide	5.93	10.26	-4.33	58%

1-Aug-08 - Nov 25, 2008

REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1 Big Sandy	8.32	13.02	-4.7	64%
2 New River	7.65	12.52	-4.87	61%
3 Roanoke	12.07	14.4	-2.33	84%
4 Upper James	8.18	12.89	-4.71	63%
5 Middle James	12.25	14.69	-2.44	83%
6 Shenandoah	8.23	12.89	-4.66	64%
7 Northern Virginia	11.4	14.19	-2.79	80%
8 Northern Piedmont	11.13	15.07	-3.94	74%
9 Chowan	10.27	15.02	-4.75	68%
Northern Coastal				
10 Plain	10.44	14.12	-3.68	74%
11 York-James	8.43	16.03	-7.6	53%
12 Southeast Virginia	10.46	15.82	-5.36	66%
13 Eastern Shore	9.48	13.18	-3.7	72%
Statewide	9.59	14.09	-4.5	68%

1-Jul-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	11.99	17.5	-5.51	69%
2	New River	11.76	16.31	-4.55	72%
3	Roanoke	15.25	18.79	-3.54	81%
4	Upper James	12.56	16.93	-4.37	74%
5	Middle James	15.79	19.1	-3.31	83%
6	Shenandoah	12.59	16.65	-4.06	76%
7	Northern Virginia	14.73	17.96	-3.23	82%
8	Northern Piedmont	14.16	19.47	-5.31	73%
9	Chowan	13.39	19.53	-6.14	69%
	Northern Coastal				
10	Plain	12.13	18.57	-6.44	65%
11	York-James	9.99	21.13	-11.14	47%
12	Southeast Virginia	15.08	20.89	-5.81	72%
13	Eastern Shore	13.26	17.18	-3.92	77%
	Statewide	13.05	18.43	-5.38	71%

1-Jun-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	14.92	21.64	-6.72	69%
2	New River	14.6	20.16	-5.56	72%
3	Roanoke	17.8	22.68	-4.88	78%
4	Upper James	15.1	20.64	-5.54	73%
5	Middle James	17.71	22.61	-4.9	78%
6	Shenandoah	16.35	20.36	-4.01	80%
7	Northern Virginia	19.47	21.82	-2.35	89%
8	Northern Piedmont	19.19	23.48	-4.29	82%
9	Chowan	14.81	23.18	-8.37	64%
	Northern Coastal				
10	Plain	15.61	22.13	-6.52	71%
11	York-James	11.86	24.54	-12.68	48%
12	Southeast Virginia	17.18	24.5	-7.32	70%
13	Eastern Shore	17.73	20.16	-2.43	88%
	Statewide	15.91	22.22	-6.31	72%

1-May-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	17.37	26.46	-9.09	66%
2	New River	17.17	24.37	-7.2	70%
3	Roanoke	21.07	27.01	-5.94	78%
4	Upper James	17.78	24.92	-7.14	71%
5	Middle James	21.82	26.85	-5.03	81%
6	Shenandoah	20.6	24.2	-3.6	85%
7	Northern Virginia	27.73	26.16	1.57	106%
8	Northern Piedmont	24.81	27.7	-2.89	90%
9	Chowan	18.39	27.27	-8.88	67%
	Northern Coastal				
10	Plain	21.67	26.29	-4.62	82%
11	York-James	14.29	28.81	-14.52	50%
12	Southeast Virginia	21.19	28.36	-7.17	75%
13	Eastern Shore	21.88	23.68	-1.8	92%
	Statewide	19.87	26.48	-6.61	75%

1-Apr-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	21.59	30.22	-8.63	71%
2	New River	21.87	27.92	-6.05	78%
3	Roanoke	26.3	30.81	-4.51	85%
4	Upper James	22.5	28.32	-5.82	79%
5	Middle James	27.73	30.19	-2.46	92%
6	Shenandoah	25.69	27.12	-1.43	95%
7	Northern Virginia	33.77	29.46	4.31	115%
8	Northern Piedmont	30.38	30.99	-0.61	98%
9	Chowan	24.82	30.7	-5.88	81%
	Northern Coastal				
10	Plain	25.94	29.38	-3.44	88%
11	York-James	21.03	32.11	-11.08	65%
12	Southeast Virginia	27.66	31.61	-3.95	88%
13	Eastern Shore	26.22	26.6	-0.38	99%
	Statewide	25.18	29.9	-4.72	84%

1-Mar-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	25.39	34.47	-9.08	74%
2	New River	24.42	31.59	-7.17	77%
3	Roanoke	29.34	35.08	-5.74	84%
4	Upper James	24.98	32.11	-7.13	78%
5	Middle James	30.83	34.25	-3.42	90%
6	Shenandoah	28.2	30.32	-2.12	93%
7	Northern Virginia	36.5	33.12	3.38	110%
8	Northern Piedmont	33	34.8	-1.8	95%
9	Chowan Northern Coastal	28.55	35.07	-6.52	81%
10	Plain	29.25	33.66	-4.41	87%
11	York-James	25.71	36.8	-11.09	70%
12	Southeast Virginia	30.79	35.81	-5.02	86%
13	Eastern Shore	28.35	30.91	-2.56	92%
	Statewide	28.25	33.94	-5.69	83%

1-Feb-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	27.87	38.05	-10.18	73%
2	New River	26.17	34.52	-8.35	76%
3	Roanoke	31.55	38.39	-6.84	82%
4	Upper James	26.88	34.96	-8.08	77%
5	Middle James	33.44	37.37	-3.93	89%
6	Shenandoah	30.15	32.73	-2.58	92%
7	Northern Virginia	39.16	35.79	3.37	109%
8	Northern Piedmont	35.4	37.77	-2.37	94%
9	Chowan Northern Coastal	31.32	38.24	-6.92	82%
10	Plain	31.75	36.8	-5.05	86%
11	York-James	29.4	40.33	-10.93	73%
12	Southeast Virginia	34.42	39.31	-4.89	88%
13	Eastern Shore	31.54	34.1	-2.56	92%
	Statewide	30.67	37.07	-6.4	83%

1-Jan-08 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	30.14	41.78	-11.64	72%
2	New River	27.41	37.73	-10.32	73%
3	Roanoke	32.44	42.31	-9.87	77%
4	Upper James	28.14	38.24	-10.1	74%
5	Middle James	34.41	41.03	-6.62	84%
6	Shenandoah	31.13	35.58	-4.45	87%
7	Northern Virginia	40.54	39.07	1.47	104%
8	Northern Piedmont	38.29	41.29	-3	93%
9	Chowan	32.5	42.35	-9.85	77%
	Northern Coastal				
10	Plain	32.97	40.55	-7.58	81%
11	York-James	30.81	44.47	-13.66	69%
12	Southeast Virginia	35.93	43.47	-7.54	83%
13	Eastern Shore	33.34	37.66	-4.32	89%
	Statewide	32.04	40.71	-8.67	79%

1-Dec-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	33.05	45.42	-12.37	73%
2	New River	29.86	40.44	-10.58	74%
3	Roanoke	35.66	45.56	-9.9	78%
4	Upper James	31.11	41.19	-10.08	76%
5	Middle James	37.09	44.2	-7.11	84%
6	Shenandoah	34.08	38.17	-4.09	89%
7	Northern Virginia	43.57	42.17	1.4	103%
8	Northern Piedmont	41.2	44.57	-3.37	92%
9	Chowan	36.64	45.37	-8.73	81%
	Northern Coastal				
10	Plain	35.71	43.83	-8.12	81%
11	York-James	34.92	47.86	-12.94	73%
12	Southeast Virginia	39.58	46.65	-7.07	85%
13	Eastern Shore	37.91	40.9	-2.99	93%
	Statewide	35.11	43.83	-8.72	80%

1-Nov-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	34.75	48.7	-13.95	71%
2	New River	30.31	43.47	-13.16	70%
3	Roanoke	36.14	48.92	-12.78	74%
4	Upper James	31.51	44.55	-13.04	71%
5	Middle James	37.6	47.71	-10.11	79%
6	Shenandoah	35.18	41.22	-6.04	85%
7	Northern Virginia	45.16	45.58	-0.42	99%
8	Northern Piedmont	42.07	48.37	-6.3	87%
9	Chowan	37.09	48.48	-11.39	77%
	Northern Coastal				
10	Plain	36.82	46.97	-10.15	78%
11	York-James	35.74	51.23	-15.49	70%
12	Southeast Virginia	40.15	49.72	-9.57	81%
13	Eastern Shore	38.75	43.84	-5.09	88%
	Statewide	35.91	47.06	-11.15	76%

1-Oct-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	36.71	51.58	-14.87	71%
2	New River	34.02	46.64	-12.62	73%
3	Roanoke	39.76	52.63	-12.87	76%
4	Upper James	33.88	47.8	-13.92	71%
5	Middle James	41.22	51.55	-10.33	80%
6	Shenandoah	37.39	44.41	-7.02	84%
7	Northern Virginia	48.4	49.06	-0.66	99%
8	Northern Piedmont	45.07	52.36	-7.29	86%
9	Chowan	40.19	52.06	-11.87	77%
	Northern Coastal				
10	Plain	42.2	50.48	-8.28	84%
11	York-James	39.58	54.76	-15.18	72%
12	Southeast Virginia	45.42	53.38	-7.96	85%
13	Eastern Shore	42.12	47.05	-4.93	90%
	Statewide	39.22	50.56	-11.34	78%

1-Sep-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	37.96	55.04	-17.08	69%
2	New River	35.65	50.05	-14.4	71%
3	Roanoke	41.84	56.86	-15.02	74%
4	Upper James	36.14	51.3	-15.16	70%
5	Middle James	42.04	55.68	-13.64	76%
6	Shenandoah	39.34	48.08	-8.74	82%
7	Northern Virginia	49.57	53.13	-3.56	93%
8	Northern Piedmont	46.06	56.64	-10.58	81%
9	Chowan Northern Coastal	41.15	56.49	-15.34	73%
10	Plain	43.44	54.57	-11.13	80%
11	York-James	41.48	59.66	-18.18	70%
12	Southeast Virginia	46.15	57.81	-11.66	80%
13	Eastern Shore	43.68	50.66	-6.98	86%
	Statewide	40.64	54.56	-13.92	74%

1-Aug-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	39.14	58.87	-19.73	66%
2	New River	36.85	53.36	-16.51	69%
3	Roanoke	42.67	60.58	-17.91	70%
4	Upper James	37.58	54.63	-17.05	69%
5	Middle James	44.76	59.5	-14.74	75%
6	Shenandoah	42.11	51.41	-9.3	82%
7	Northern Virginia	51.43	56.98	-5.55	90%
8	Northern Piedmont	48.44	60.46	-12.02	80%
9	Chowan Northern Coastal	43.16	60.8	-17.64	71%
10	Plain	44.89	58.43	-13.54	77%
11	York-James	43.8	64.53	-20.73	68%
12	Southeast Virginia	49.62	62.93	-13.31	79%
13	Eastern Shore	46.17	54.53	-8.36	85%
	Statewide	42.51	58.39	-15.88	73%

1-Jul-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	43.63	63.35	-19.72	69%
2	New River	39.77	57.15	-17.38	70%
3	Roanoke	45.94	64.97	-19.03	71%
4	Upper James	39.92	58.67	-18.75	68%
5	Middle James	47.11	63.91	-16.8	74%
6	Shenandoah	44.11	55.17	-11.06	80%
7	Northern Virginia	53.89	60.75	-6.86	89%
8	Northern Piedmont	49.98	64.86	-14.88	77%
9	Chowan	46.22	65.31	-19.09	71%
	Northern Coastal				
10	Plain	46.31	62.88	-16.57	74%
11	York-James	47.25	69.63	-22.38	68%
12	Southeast Virginia	52.93	68	-15.07	78%
13	Eastern Shore	48.26	58.53	-10.27	82%
	Statewide	45.24	62.73	-17.49	72%

1-Jun-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	46.38	67.49	-21.11	69%
2	New River	42.81	61	-18.19	70%
3	Roanoke	48.87	68.86	-19.99	71%
4	Upper James	43.67	62.38	-18.71	70%
5	Middle James	50.47	67.42	-16.95	75%
6	Shenandoah	47.38	58.88	-11.5	80%
7	Northern Virginia	55.83	64.61	-8.78	86%
8	Northern Piedmont	52.13	68.87	-16.74	76%
9	Chowan	48.43	68.96	-20.53	70%
	Northern Coastal				
10	Plain	48.16	66.44	-18.28	72%
11	York-James	49.43	73.04	-23.61	68%
12	Southeast Virginia	56.15	71.61	-15.46	78%
13	Eastern Shore	53.52	61.51	-7.99	87%
	Statewide	48.1	66.52	-18.42	72%

1-May-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	48.13	72.31	-24.18	67%
2	New River	44.59	65.21	-20.62	68%
3	Roanoke	50.84	73.19	-22.35	69%
4	Upper James	45.7	66.66	-20.96	69%
5	Middle James	52.93	71.66	-18.73	74%
6	Shenandoah	49.57	62.72	-13.15	79%
7	Northern Virginia	57.1	68.95	-11.85	83%
8	Northern Piedmont	54.22	73.09	-18.87	74%
9	Chowan	51.32	73.05	-21.73	70%
	Northern Coastal				
10	Plain	49.4	70.6	-21.2	70%
11	York-James	50.99	77.31	-26.32	66%
12	Southeast Virginia	58.12	75.47	-17.35	77%
13	Eastern Shore	55.26	65.03	-9.77	85%
	Statewide	50.13	70.78	-20.65	71%

1-Apr-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	52.59	76.07	-23.48	69%
2	New River	47.71	68.76	-21.05	69%
3	Roanoke	54.05	76.99	-22.94	70%
4	Upper James	49.2	70.06	-20.86	70%
5	Middle James	56.16	75	-18.84	75%
6	Shenandoah	53.15	65.64	-12.49	81%
7	Northern Virginia	60.82	72.25	-11.43	84%
8	Northern Piedmont	57.31	76.38	-19.07	75%
9	Chowan	55.75	76.48	-20.73	73%
	Northern Coastal				
10	Plain	53.11	73.69	-20.58	72%
11	York-James	55.03	80.61	-25.58	68%
12	Southeast Virginia	62.63	78.72	-16.09	80%
13	Eastern Shore	59.81	67.95	-8.14	88%
	Statewide	53.77	74.2	-20.43	72%

1-Mar-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	55.73	80.32	-24.59	69%
2	New River	51.75	72.43	-20.68	71%
3	Roanoke	57.74	81.26	-23.52	71%
4	Upper James	52.83	73.85	-21.02	72%
5	Middle James	59.21	79.06	-19.85	75%
6	Shenandoah	56.03	68.84	-12.81	81%
7	Northern Virginia	63.98	75.91	-11.93	84%
8	Northern Piedmont	59.74	80.19	-20.45	74%
9	Chowan Northern Coastal	58.32	80.85	-22.53	72%
10	Plain	55.92	77.97	-22.05	72%
11	York-James	56.75	85.3	-28.55	67%
12	Southeast Virginia	64.58	82.92	-18.34	78%
13	Eastern Shore	61.59	72.26	-10.67	85%
	Statewide	56.84	78.24	-21.4	73%

1-Feb-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	57.13	83.9	-26.77	68%
2	New River	53.4	75.36	-21.96	71%
3	Roanoke	59.79	84.57	-24.78	71%
4	Upper James	55.28	76.7	-21.42	72%
5	Middle James	61.18	82.18	-21	74%
6	Shenandoah	58.08	71.25	-13.17	82%
7	Northern Virginia	66.82	78.58	-11.76	85%
8	Northern Piedmont	62.19	83.16	-20.97	75%
9	Chowan Northern Coastal	60.49	84.02	-23.53	72%
10	Plain	58.43	81.11	-22.68	72%
11	York-James	58.49	88.83	-30.34	66%
12	Southeast Virginia	66.84	86.42	-19.58	77%
13	Eastern Shore	64.37	75.45	-11.08	85%
	Statewide	58.93	81.37	-22.44	72%

1-Jan-07 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	60.31	87.63	-27.32	69%
2	New River	56.36	78.57	-22.21	72%
3	Roanoke	63.67	88.49	-24.82	72%
4	Upper James	58.29	79.98	-21.69	73%
5	Middle James	64.76	85.84	-21.08	75%
6	Shenandoah	59.64	74.1	-14.46	80%
7	Northern Virginia	69.06	81.86	-12.8	84%
8	Northern Piedmont	64.7	86.68	-21.98	75%
9	Chowan	63.01	88.13	-25.12	71%
	Northern Coastal				
10	Plain	62.67	84.86	-22.19	74%
11	York-James	61.1	92.97	-31.87	66%
12	Southeast Virginia	70.01	90.58	-20.57	77%
13	Eastern Shore	66.54	79.01	-12.47	84%
	Statewide	61.99	85.01	-23.02	73%

1-Dec-06 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	62.3	91.27	-28.97	68%
2	New River	58.14	81.28	-23.14	72%
3	Roanoke	65.85	91.74	-25.89	72%
4	Upper James	60.28	82.93	-22.65	73%
5	Middle James	66.34	89.01	-22.67	75%
6	Shenandoah	60.76	76.69	-15.93	79%
7	Northern Virginia	70.73	84.96	-14.23	83%
8	Northern Piedmont	66.45	89.96	-23.51	74%
9	Chowan	65.18	91.15	-25.97	72%
	Northern Coastal				
10	Plain	64.37	88.14	-23.77	73%
11	York-James	62.92	96.36	-33.44	65%
12	Southeast Virginia	72.46	93.76	-21.3	77%
13	Eastern Shore	69.29	82.25	-12.96	84%
	Statewide	63.84	88.13	-24.29	72%

1-Nov-06 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	65.06	94.55	-29.49	69%
2	New River	62.1	84.31	-22.21	74%
3	Roanoke	71.24	95.1	-23.86	75%
4	Upper James	64.07	86.29	-22.22	74%
5	Middle James	72.08	92.52	-20.44	78%
6	Shenandoah	64.91	79.74	-14.83	81%
7	Northern Virginia	76.52	88.37	-11.85	87%
8	Northern Piedmont	72.76	93.76	-21	78%
9	Chowan	72.55	94.26	-21.71	77%
	Northern Coastal				
10	Plain	69.67	91.28	-21.61	76%
11	York-James	68.59	99.73	-31.14	69%
12	Southeast Virginia	80.08	96.83	-16.75	83%
13	Eastern Shore	74.17	85.19	-11.02	87%
	Statewide	69	91.36	-22.36	76%

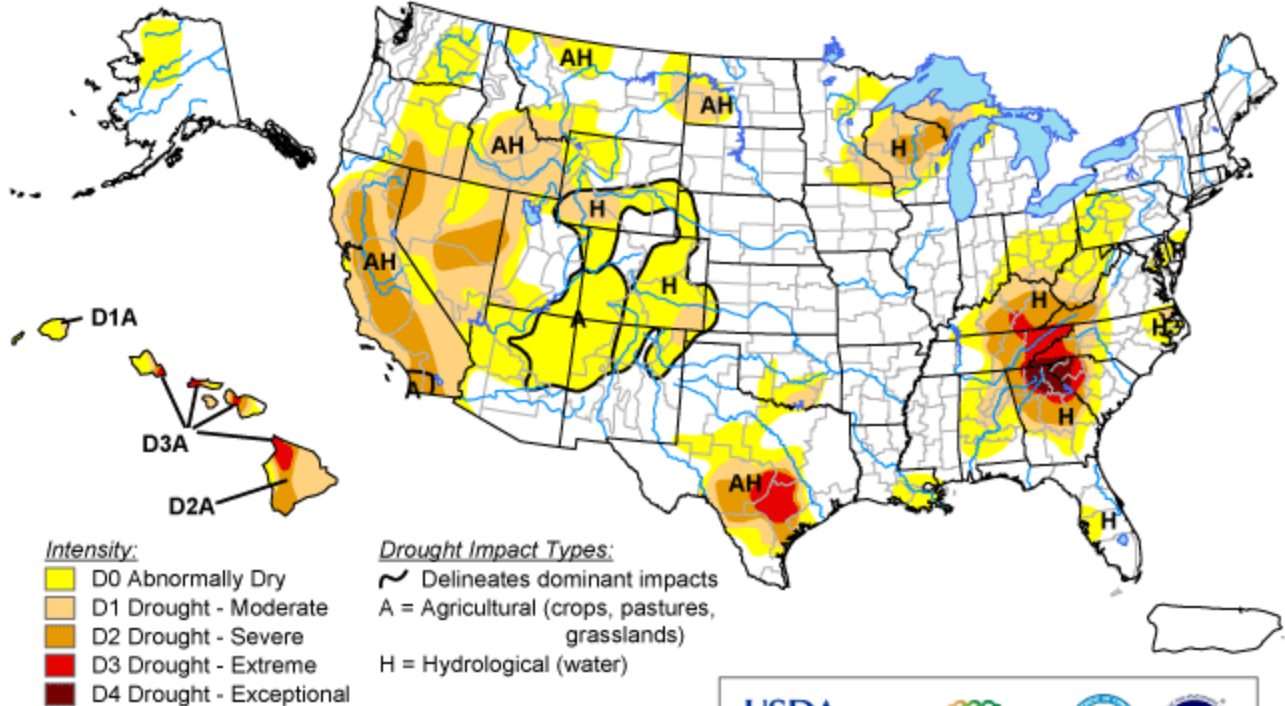
1-Oct-06 - Nov 25, 2008

	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	70.03	97.43	-27.4	72%
2	New River	67.08	87.48	-20.4	77%
3	Roanoke	77.28	98.81	-21.53	78%
4	Upper James	71	89.54	-18.54	79%
5	Middle James	79.77	96.36	-16.59	83%
6	Shenandoah	70.15	82.93	-12.78	85%
7	Northern Virginia	81.31	91.85	-10.54	89%
8	Northern Piedmont	79.29	97.75	-18.46	81%
9	Chowan	80.25	97.84	-17.59	82%
	Northern Coastal				
10	Plain	75.75	94.79	-19.04	80%
11	York-James	76.59	103.26	-26.67	74%
12	Southeast Virginia	85.15	100.49	-15.34	85%
13	Eastern Shore	81.1	88.4	-7.3	92%
	Statewide	75.24	94.86	-19.62	79%

APPENDIX B

U.S. Drought Monitor

November 18, 2008
Valid 8 a.m. EST



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, November 20, 2008
Author: Brad Rippey, U.S. Department of Agriculture

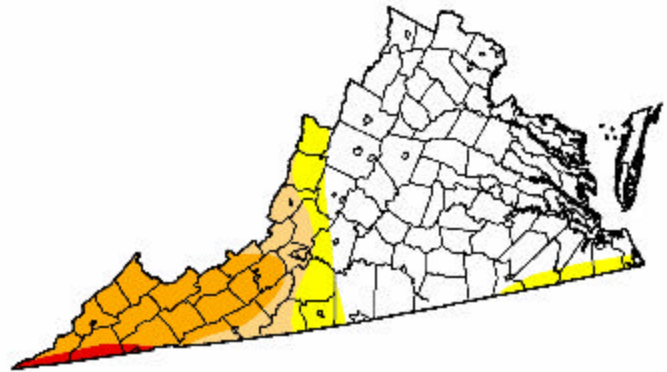
APPENDIX C

U.S. Drought Monitor Virginia

November 18, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	67.5	32.5	23.4	16.8	1.4	0.0
Last Week (11/11/2008 map)	63.1	36.9	25.5	16.8	1.5	0.0
3 Months Ago (08/26/2008 map)	6.4	93.6	72.5	32.3	0.0	0.0
Start of Calendar Year (01/01/2008 map)	8.0	92.0	74.8	27.3	9.2	6.3
Start of Water Year (10/07/2008 map)	57.8	42.2	25.1	1.6	0.0	0.0
One Year Ago (11/20/2007 map)	4.2	95.8	83.0	20.4	9.2	1.3



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

<http://drought.unl.edu/dm>



Released Thursday, November 20, 2008
Author: Brad Rippey, U.S. Department of Agriculture

APPENDIX D

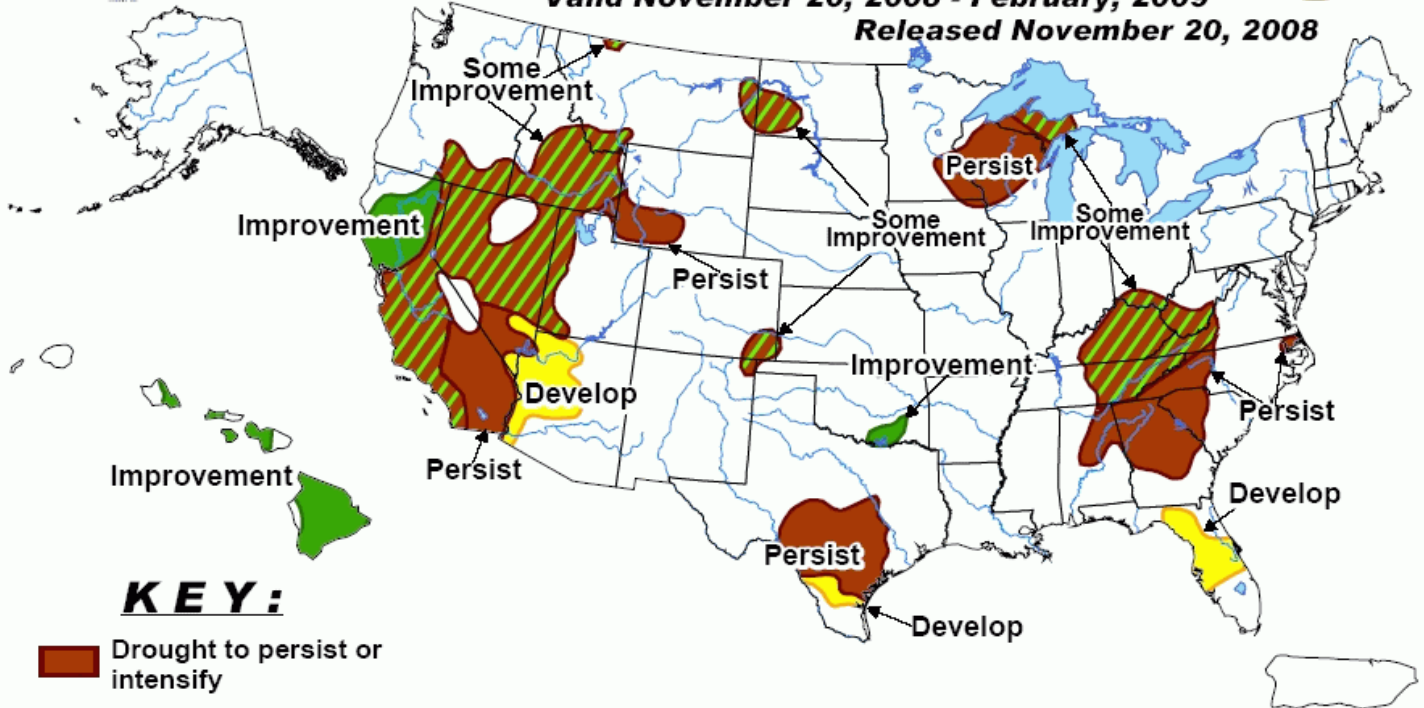


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid November 20, 2008 - February, 2009

Released November 20, 2008



KEY:

-  Drought to persist or intensify
-  Drought ongoing, some improvement
-  Drought likely to improve, impacts ease
-  Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

APPENDIX E

Condition of Public Water Supplies

November 20, 2008

Date: **11/20/08**

	Restriction totals
Mandatory	3
Voluntary	48
Total	51

N-None
 M-
 Mandatory
 V-Voluntary
 B-Better
 S-Stable/Same
 W-Worse

PWSID	Waterworks	Source Name	Restrictions	Situation	Population Served
1105200	Town of Jonesville	Wynn Spring #1 and Slem Spring	N	W 11/20/08: Combined springs flowrate is about 220 gpm. Using all of Wynne Spring, some overflow at Slem Spring. WTP operating at 220 gpm for 18.5 hrs/day. On 10/15/08 the spring flow was 280 gpm. In June 08, the springs' flow rate was 320 gpm. On 11/16/07, the WTP rate was 300 gpm.	
1105400	Lee County PSA	Blue Springs	N	B 11/20/08: Spring flow at about 180 gpm and could possibly go up to 200 gpm. On 10/15/08 the flow was about 130 gpm. There is still flow-by at the source. STILL ABLE TO MEET DEMAND.	
1105400	Lee County PSA	KVS Quarry	N	W 11/20/08: Water level in quarry is currently at 235 inches below catwalk . On 10/15/08 the level was 223 inches below catwalk. The water level is much lower than this time last year. Last year they installed a floating raw water pump system to alleviate effects of lowering water level. STILL ABLE TO MEET DEMAND.	
1195050	Town of Appalachia	reservoir	N	W 11/20/08: down 9' from overflow; 53 MG, 129 days ± 10 left. Level was down 7'-10" from overflow on 10/15/08. On 11/15/07 the level was 15'-4" down from overflow. Not currently using auxiliary river source due to pump malfunction. NO WATER SUPPLY PROBLEMS EXPECTED.	

1195100	Town of Big Stone Gap	Big Cherry Reservoir	V	W 11/20/08: Reservoir down 14.5 ft from overflow. 210 MG, 70 days left. Reservoir down 9 ft from overflow on 10/15/08. 0.5 ft higher than on 11/16/07.	
1195950	Town of Wise	reservoir	N	W 11/19/08: Reservoir down 9'-9.5", 112 MG left, 218 days left @ 0.6 MGD. Down 8'-0.25" on 10/15/08. Still using auxiliary mine well source daily. NO WATER SUPPLY PROBLEMS EXPECTED.	
1720076	City of Norton	reservoirs	N	W 11/20/08: Upper reservoir down 19 ft, 22.7 MG left. Lower reservoir down 15 ft, 28.2 MG left. from overflow. Total: 50.9 MG left. 67 MG was left on 10/15/08. 21 MG more in reservoirs now than on 11/16/07. Still buying water from Wise County PSA and Big Stone Gap. NO WATER SUPPLY PROBLEMS EXPECTED.	
2017095	Bath County Regional Water - BCSA	2 drilled wells	N	B - Voluntary conservation request has been lifted. Well production levels back to normal.	1,420
2023720	Town of Troutville	Five Drilled Wells	N	S - Town reported the pumping rate of their No. 3 well dropped from 123 gpm to 40 gpm. The pumping rates of the other four wells are the same.	500
2065250	Fluvanna Correctional Center for Women	Mechunk Creek and on-site Raw Water Reservoir	V	S - Reservoir is 75% full (~30 MG stored). Moderate Drought Condition continues to conserve water.	1,650
2125325	NCSA - Lovingston	Black Creek Reservoir	V	B - Voluntary conservation requested on 8/20/08, remains in effect. Reservoir is ~2.5 feet below overflow.	2,500
2125650	NCSA - Schuyler	Johnson's Branch	V	B - Voluntary conservation requested on 8/20/08, remains in effect. Spring fed branch flow is stable.	500
2125910	NCSA - Wintergreen	Lake Monacan	V	B - Voluntary conservation requested on 8/20/08, remains in effect. Lake is full. Stoney Creek flowing well.	6,600
2187406	Front Royal	South Fork Shenandoah River	V	B - Stream flow reported at 23.20% mean stream flow (14 day avg) or approx 372 cfs on 18 November 2008. VWPP requires conservation controls to be implemented at 24% (voluntary) and 17% (mandatory) of mean stream flow based on 14-day running average.	12,500
2660345	City of Harrisonburg	North River, Dry River/Switzer Reservoir (Rawley Springs)	V	S - Voluntary conservation has been requested. This has not been implemented as a result of limited low source water quantity, but rather at the request of the Governor's letter requesting conservation.	44,500
3053280	DCWA Central (Dinwiddie County)	Appomattox River Water Authority	V	S - Voluntary restrictions began on 7/29/08.	6,800

		(ARWA)			
3081550	GCWSA - Jarratt	Nottoway River	N	S - 11/17/08 - Waterworks production rate still reduced due to lower demand; river level, sufficient to allow plant operation at 2.0 mgd	7,190
3093120	Isle of Wight County	Suffolk	V	B - 11/18/08 - Obtains water from Suffolk. Follows Suffolk's lead on conservation.	1,284
3550050	Chesapeake - Western Branch system	City of Portsmouth	V	S - 11/17/08 This portion of the city is consecutive to (receives water from) the city of Portsmouth. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Portsmouth's lead on conservation.	36,444
3550051	Chesapeake	Northwest River, City of Norfolk Raw Water (Lake Gaston)	V	B - City Council voted to go to voluntary conservation city-wide - took effect on 24 Oct 2007. Chlorides are used as an indicator of drought, the higher the levels the more concentrated the contaminant in a lesser amount of surface water. The chlorides on November 20, 2008 average 40 mg/l Total rainfall for the month of October 2008 was 1.6 inches which helped decrease the chloride levels.	101,428
3550052	Chesapeake - South Norfolk system	City of Norfolk	V	S - 11/17/08-This portion of the city is consecutive to (receives water from) the city of Norfolk. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Norfolk's lead on conservation.	38,611
3570150	Colonial Heights	ARWA	V	S - Lifted mandatory restrictions on 12/1/07. Voluntary restrictions currently in place.	17,286
3595250	Emporia	Meherrin River	N	S - 11/19/08 - Water is going over the dam. Power plant on river continues to operate with no shutdowns.	5,600
3670800	Virginia-American Water Company (Hopewell)	Appomattox & James Rivers	N	S - 11/17/08 - Intake levels still sufficient to supply plant. Rainfall for October about half of normal and river water alkalinity and pH values increased.	25000 - Primary / 42463 Total including Consecutive System (Ft. Lee)
3700500	Newport News	Chickahomony River, Skiffs Creek, Diascand, Little Creek, Harwoods Mill, Lee Hall	N	B -- 11/16/8 - Total reservoir capacity at 78.8%. Up a few percentages since last report.	406,000

3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	V	S - As of 11/17/08, reservoirs at 84.0% (slightly down from 85.7% on 10/13). Historic reservoir capacity is 82.2% at this time of year. Avg. pumping from Lake Gaston = 36.2 MGD. Called for voluntary conservation 11/1/07.	261,250 - Primary / 755,617 - Total including consecutive systems (Va Beach + military bases).
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	V	S - As of 11/14/08, reservoirs at 85% (slightly down from 86% on 10/14). Median reservoir capacity is 92% for the month and historical average capacity is 86% (period of 1969-2006). One emergency well is off. The city was at 82% reservoir capacity during the drought at this date last year reflecting emergency raw water purchases from Norfolk. Called for voluntary conservation on 10/10/07.	100,400 - Primary / 120,400 Total including consecutive systems (military bases)
3800805	Suffolk	Lone Star Lakes, Cumps Mill Pond	V	B - Will follow Portsmouth's lead and the region as far as conservation. As of 11/17/08-Average reservoir levels: Southern Lakes at 33% capacity, for the Northern Lakes at 84.9% and Crumps Mill Pond at 64.5% The Southern Lakes are for emergency use only. Overall they are at 58.7% capacity for the reservoirs for the period (August-October 2008). Operator states that for the same time period last year (August-October 2007) the overall capacities for the reservoirs was 46.7%. Still purchasing water from Portsmouth per their contract, no drought measure taken to date.	62,562
3810900	Virginia Beach	Norfolk	V	S - 11/18/08 - Obtains water from Norfolk. Called for voluntary conservation on 9/19/07.	423,743
3830850	Williamsburg	Waller Mill Reservoir	N	S - 11/17/08 - The well is still pumping into the reservoir, which has about 72% usable capacity.	16,400
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	N	B - Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights. Reservoir is at full level.	200,000
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	V	B - Purchases water from the City of Richmond and the Appomattox River Water Authority. Reservoir is at full level.	263,000

4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N	S	2,100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	S-Reservoir is full.	8,870
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	N	S-purchases water from Henrico County	2,500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	V	B- Conservation at all DOC facilities	9,300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	V	S (see Richmond)	71,000
4085770	SPRING MEADOWS- MEADOW GATE	Groundwater wells	N	S- A replacement well has been drilled and other improvements are proposed in the PER.	2,300
4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	V	S (see Richmond)	289,000
4101900	WEST POINT, TOWN OF	Groundwater wells	N	S	3,000
4127110	DELMARVA PROPERTIES	Groundwater wells	V	S-New Kent Co. encourages conservation at all county owned waterworks.	7,700
4145675	POWHATAN COURTHOUSE	Groundwater wells	N	S	2,600
4193280	COLONIAL BEACH, TOWN OF	Groundwater wells	N	S	3,300
4760100	RICHMOND, CITY OF	Surface water; James River	V	S- water levels do not affect intake; James River Regional Flow Management Plan set restrictions based on James River level for counties of Henrico, Chesterfield, Goochland, and Hanover counties, which purchase water from the City.	197,000
5515050	City of Bedford	Stoney Creek Reservoir and Wells 1 to 5	N	S - good levels	6,946
5143210	Town of Gretna	Georges Creek Res	N	S - reservoir overflowing	2,500
5031150	CCUSA	Surface - Big Otter River	N	B - Current stream flow 86 cfs.	20,000
5025450	Town of Lawrenceville	Great Creek Reservoir	N	B- water is 1" above the spillway	4,806
5025480	Lane View Subdivision	Wells	V	B	39

5025500	Brunswick Estates	Wells	V	B	70
5025550	Nottoway Acres Subdivision	Wells	V	B	58
5025570	Pleasant Grove Subdivision	Wells	V	B	85
5025625	Siouan Shores Subdivision	Wells	V	B	95
5025650	Sunnybrook Subdivision	Wells	V	B	53
5117096	Anchor Cove Subdivision	Wells	V	B	93
5117125	Buckhead Subdivision	Wells	V	B	66
5117350	Fox Run Subdivision	Wells	V	B	226
5117371	Great Creek Landing	Wells	V	B	270
5117375	Hawk's Nest Point	Wells	V	B	25
5117378	Hicks Hill Subdivision	Wells	V	B	35
5117379	Holly Grove Estates	Wells	V	B	25
5117390	Joyceville Subdivision	Wells	V	B	175
5117419	Long Branch Shores	Wells	V	B	85
5117450	Merrymount Subdivision	Wells	V	B	118
5117833	Tanglewood Shores	Wells	V	B	50
5117846	Timbuctu Subdivision	Wells	V	B	132
5029085	Buckingham County	Troublesome Creek Reservoir	N	B- water is 0.5 to 0.75 inches over spillway	5,751
5037300	Town of Keysville	Keysville Reservoir	N	S	800
5083550	Town of Halifax	Bannister River Reservoir	N	S	1,389
5780600	Town of South Boston	Dan River	N	S	9,726
5141640	Town of Stuart	South Mayo River	N	B	1,500
5147170	Town of Farmville	Appomattox River	N	B	7,011
5011050	Town of Appomattox	Wells	V	S - Operation reports show water levels rising in the wells. The town is actively looking for additional water sources.	1,708
5135160	Town of Crewe	Crystal Lake	N	s - good levels	3,500
5111450	Town of Kenbridge	Flat Rock Creek and Offstream Reservoir	N	S - good levels	1,400
5067785	Ridgscrest	Wells	N	s	52
5067265	Hales Point	Wells	N	s	46
5067937	Stripers Landing	Wells	N	s	125
5009250	ACSA	Graham Creek Reservoir	N	B - Switched from the Graham Creek Reservoir to Harris Creek.	13,574

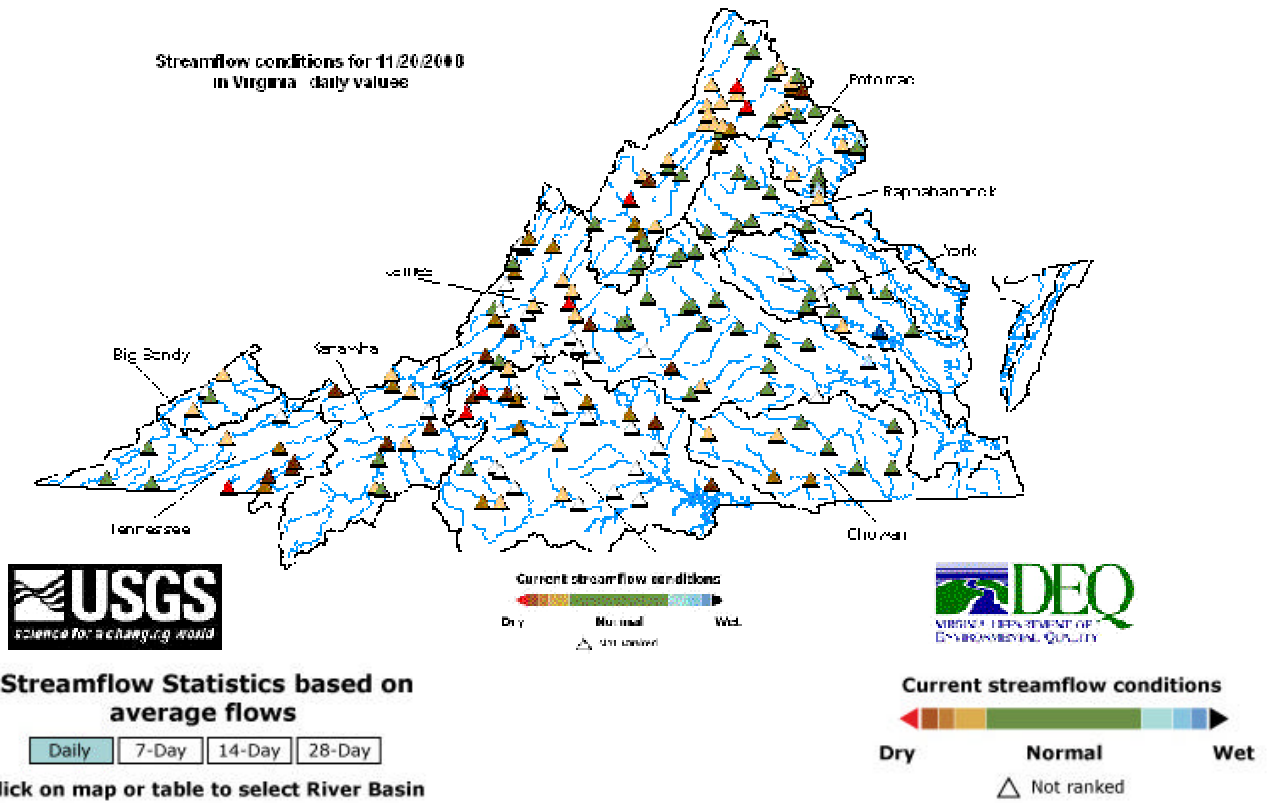
5690400	City of Martinsville	Beaver Creek Reservoir	N	W - Initial reporting - City reservoir down 3.8 feet which is lower than ~2 feet down in recent years	16,000
5680200	City of Lynchburg	James River	N	S - Using the James River, Abert Intake.	76,000
6033425	Lake Caroline WTP	Lake Caroline	N	B - Lake is full.	3,370
6047070	Emerald Hill Elementary School	Groundwater	N	S - Well EHS -3 is onstream at a reliable production rate of 12 gpm. Well 1 has been reworked for improved production. Water hauling is no longer needed.	977
6047500	Town of Culpeper	Lake Pelham	N	S - On Monday, November 17, 2008, Lake Pelham was full with strong overflow.	14,200
6061200	Marshall	Groundwater	M	S - The WSA Alert Messaging Service maintains the Water Use Restriction Notice as of 11/18/2008.	2,134
6061600	Town of Warrenton	Reservoir on Cedar Run and groundwater	N	S - On Tuesday, 11/18/08, Warrenton Reservoir is at a surface elevation of 442 ft. Airlie Reservoir is down about 2 ft from the top.	11,160
6107150	Town of Hamilton	Groundwater	M	S -11/19/08 No water supply problems. Town Council voted to maintain Mandatory water use restrictions until new Well 14 is placed in service.	2,000
6107200	Town of Hillsboro	Spring/Well	V	W - 11/18/08 Yield from new well has declined and combined well and spring have not been adequate to meet current demand. Spring is being used to supplement the well supply. A leak survey revealed 10 potential leaks in the distribution system. NOT ABLE TO CONSISTENTLY MEET DEMAND.	58
6107221	Lenah Farms	Groundwater	N	S - 11/19/08 No water use restrictions in place. No problem with water supply.	825
6107601	LCSA Raspberry Falls Subdivision	Groundwater	V	B - 11/19/08 Both wells in service. Voluntary conservation in place beginning 3/11/08 due to concerns about possible GUDI sources.	394
6107400	Town of Lovettsville	Groundwater	V	S -11/19/08 Voluntary water use restrictions remain in place; however there is no problem with water supply.	1,280
6107450	Town of Middleburg	Groundwater	N	S - 11/19/08 - Voluntary water use restrictions lifted September 2008	590
6107600	Town of Purcellville	Hirst Reservoir and groundwater	V	S - 11/17/08 Reservoir level is below expected range (front lake = 32.5' of 5.3', back lake = 2.7' of 5.0'). Approximately 84 days of storage available. Voluntary water conservation remain in place.	6,300
6107650	Town of Round Hill	Groundwater	V	W - 11/19/08 - No water supply problems. Well water levels lower than expected. Voluntary water use restrictions replace mandatory water use restrictions on 4/1/08.	3,156

6113200	Town of Madison	White Oak Run	N	S -- Stream flow remains adequate to meet normal demands.	778
6137300	Rapidan Service Authority - Rt. 15	Purchase treated surface water from Town of Orange (Rapidan River)	N	S - Town of Orange raw water availability is well above minimum.	273
6137400	Town of Gordonsville	Purchase treated surface water from RSA and Town of Orange	N	S--No water use restrictions are in place.	1,800
6137500	Town of Orange	Rapidan River	V	S - 11/18/08 - Fourteen day running average of Rapidan River flow is 188 cfs (withdrawal restrictions are imposed below 44 cfs). Offstream raw water reservoir is full.	4,500
6137999	Rapidan Service Authority - Wilderness and Lake of the Woods	Rapidan River	N	Rapidan River flow has been at an adequate level.	11,331
6153260	Woodbridge Mobile Home Park	Groundwater	M	S -- 10/16/08 No recent water outages, regular low water pressure continues. Waterworks may continue to have low pressure due to inadequate sources and leaks in the distribution system. This problem is indirectly related to drought as source problems existed previously. A wellsite inspection was conducted 10/7/08 for a new well to serve the park, and potentially alleviate their water supply concerns.	320
6177280 and 6177300	Spotsylvania County	Rappahanock River, Motts Reservoir, Hunting Run Reservoir, Ni Reservoir	N	B - River flow averaging 500cfs over past week. S - Motts reservoir down 12". W - Ni Reservoir down 12".	79,315
6179100 and 6179775	Stafford County	Smith Lake and Abel Lake	N	W - Smith Lake is down 11", Abel is down 14". In June 2008, water supply emergency from 2007 was rescinded with county wide conservation requested.	93,669

Notes of interest:

- (1) Metropolitan Washington Council of Governments lifted the drought Watch, returning to Normal status, lifting a region-wide voluntary conservation advisory, on 4/1/08, covering DC, Maryland, and Northern Virginia.
- (2) Interstate Commission on the Potomac River Basin (ICPRB) gathers meteorological, drought, and water supply data from all of the major water suppliers in the Metro Washington area and determines the need for upstream reservoir releases, if any, to augment the flow in the Potomac River for water supply withdrawal. ICPRB has predicted that likelihood of releases from upstream reservoirs is slightly below normal.

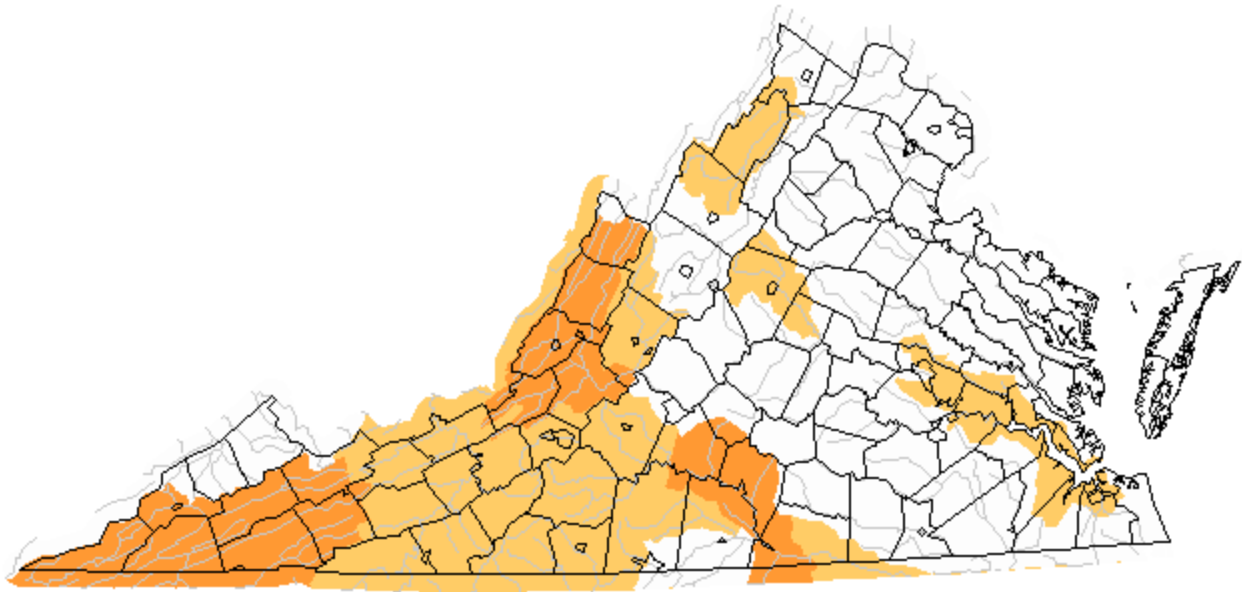
APPENDIX F



APPENDIX G

Drought Watch -- USGS State Information on Drought Map of below normal 7-day average streamflow

Sunday, November 23, 2008

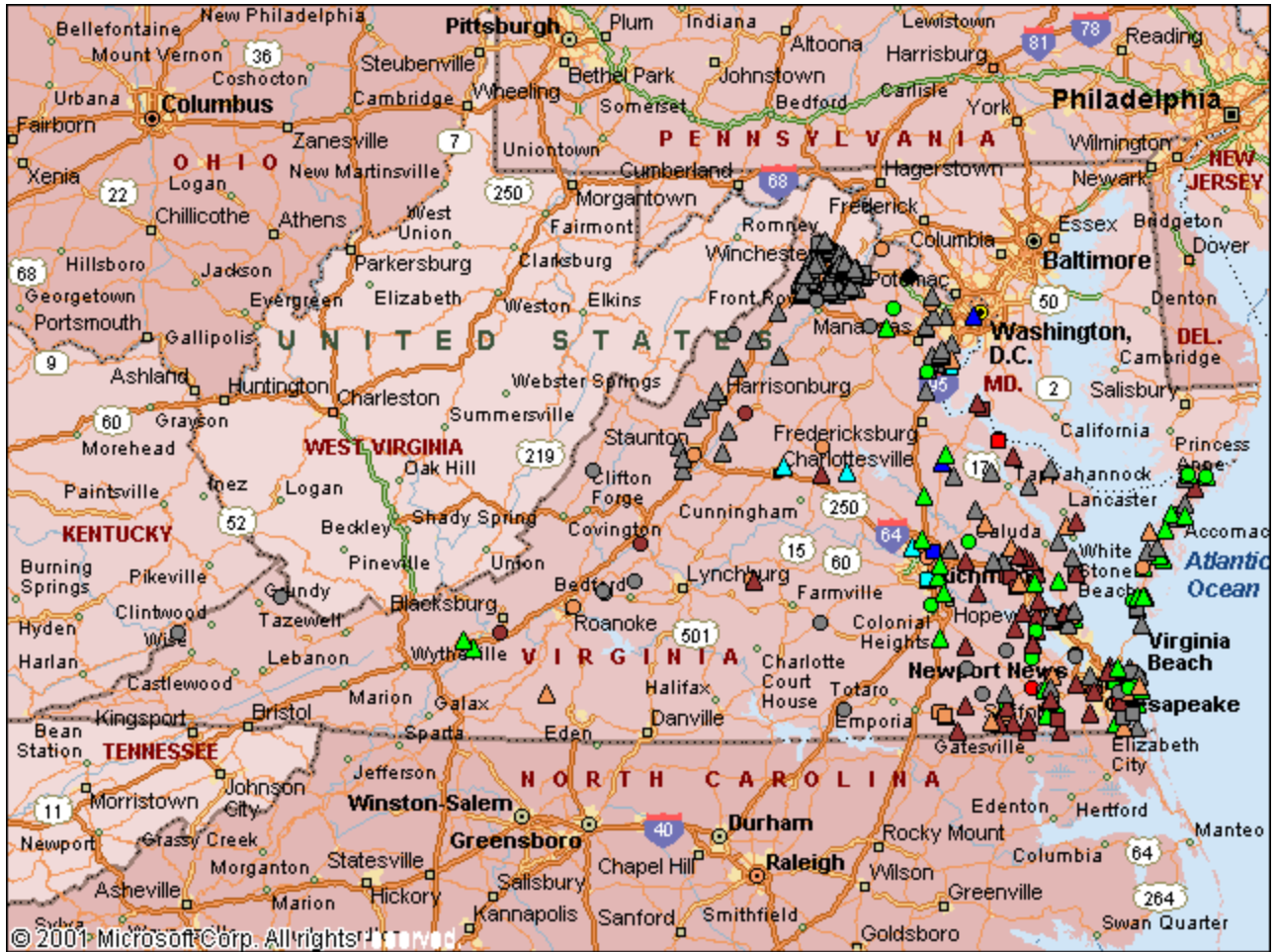


Explanation - Percentile classes				
LOW	≤ 5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

APPENDIX H

Virginia Climate Response Network

November 20, 2008



Explanation - Percentile classes							
●	●	●	●	●	●	●	●
New Low	<10	10-24	25-75	76-90	>90	New High	Not Ranked
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		