

DROUGHT MONITORING TASK FORCE

Drought Status Report

November 20, 2007

Statewide precipitation for the previous water year (October 1, 2006 through September 30, 2007) was below normal (81% of normal). Statewide precipitation for the period from October 1, 2006 until November 15, 2007 was below normal (81% of normal) and statewide precipitation in each successive shorter time period is below normal. Statewide precipitation for the period from November 1, 2007 to November 15, 2007 is 39% of normal. Precipitation greater than 85% of normal is considered to be in the normal range. The following drought evaluation regions are currently below normal for the period beginning October 1, 2006; Big Sandy (72%), New River (82%), Roanoke (81%), Shenandoah (84%), Northern Virginia (79%), Northern Piedmont (73%), Northern Coastal Plain (80%), and York-James (78%). There were only minor changes in accumulated precipitation deficits across the Commonwealth since the last report. Appendix A contains precipitation tables for periods going back to October 1, 2006. The long-range monthly climatologic outlook calls for above normal temperatures and below normal precipitation through December of 2007. The long-range seasonal outlook calls for above normal temperatures for the entire Commonwealth through February 2008. The long-range seasonal outlook calls for equal chances of below normal, normal and above normal precipitation for the area west of the Blue Ridge and below normal precipitation for the remainder of the Commonwealth through February 2008.

The latest NOAA drought monitor indicates the occurrence of drought conditions throughout the majority of the Commonwealth and is included as Appendix B. Appendix C contains information from the national drought monitor with only Virginia displayed. Drought conditions have improved slightly over the Commonwealth during the last month due to one significant rainfall event in late October. Drought conditions have intensified slightly during the first two weeks of November and are likely to intensify further absent additional precipitation. Exceptional drought conditions persist in portions of southwest Virginia. The NOAA seasonal drought outlook through February 2008 indicates that drought conditions may improve in the majority of the Commonwealth with the potential for persistence along the North Carolina border. The seasonal drought outlook is included as Appendix D.

Seven day average streamflows for November 18 in the majority of the Commonwealth are below normal (10th to 24th percentiles) with some areas in south central Virginia in the range of flows indicative of moderate hydrologic drought (6th to 9th percentiles). Stream flows reacted positively to precipitation events in late October and early November but will continue to decline without additional precipitation. While drought monitoring ground water levels data is scarce, ground water levels are generally in the lower range of expected water levels in areas east of Route 95 and are generally lower than normal in the area west of Route 95. Six dedicated drought monitoring wells are at levels indicative of moderate hydrologic drought (10th to 24th percentiles) and four are at levels indicative of severe hydrologic drought (< 10th percentile). Precipitation in late October and early November has increased or stabilized levels of large reservoirs such as Lake Moomaw, Smith Mountain Lake, Kerr Reservoir, and Philpott.

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 37 systems have initiated voluntary water conservation requirements and 27 systems have initiated mandatory water conservation requirements. The Town of Appalachia has received an emergency Virginia Water Protection permit from DEQ that allows pumpage from the Powell River to augment their small reservoir. Appalachia estimates that without the pumpage from the Powell River they would have less than 60 days of water supply remaining. Appendix E contains a table of waterworks that have initiated water conservation requirements. The Virginia Department of Emergency Management reports anecdotal reports of private well failures in the most drought stricken areas of southwest Virginia.

The Virginia Department of Forestry reports that Cooler weather and recent rains have helped to reduce the overall threat of wildfire. The improving conditions allowed the statewide ban on open burning to be lifted on November 16th. Since October 15th, the Department of Forestry has responded to 120 wildfires which burned 859 acres and damaged or destroyed 3 homes and 5 other outbuildings.

The Department of Game and Inland Fisheries reports that precipitation in late October increased stream flows in the western part of the state so that all October trout stockings could occur. November stockings are in progress but streamflows continue to decrease. Lake levels are still low in many areas and boat launching may not be possible at some ramps.

The intensity of drought impacts has begun to decline with the end of the active growing season. Unseasonably warm temperatures in October resulted in an extension of the normal active growing season and resulted in a loss of potential

water resource storage that typically occurs in late October. Current moisture deficits coupled with a dry fall and winter could result in significant drought impacts across all socio-economic sectors in the spring of 2008.

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

Report of the Climatology Office of the University of Virginia

Frontal passages in late October brought much needed rainfall across most of the Commonwealth, with the exception of locations throughout the Valley of Virginia and, especially the far southwest region. In the more mountainous areas, rainfall amounts varied significantly, but averaged only about half of the overall statewide average for the month.

In general, the full transition to fall has been appreciably delayed this year, as evidenced by the late, and rather protracted, change in foliage colors. Across much of the state, the dates of first frost (32°F) and hard freeze (28°F) have been running on the order of one to two weeks later than normal. Many locations in Central Virginia have yet to experience a hard freeze. The lack of freezing temperatures has prompted many tree species to retain green leaves, and kept moisture uptake unseasonably high.

The National Weather Service precipitation outlooks through the end of this month are generally in favor of above normal precipitation across Virginia; but, in all likelihood, the total precipitation for November will still be below normal overall. NWS outlooks for December and the winter season (through February) indicate a continuation of below normal precipitation.

Although these long-range outlooks are not always reliable, the apparent (pending) accuracy of last month's outlook for November, gives a somewhat higher confidence in their continued success. As discussed in the previous report, a shortfall in moisture during the colder months would likely result in serious water-related impacts throughout the 2008 growing season.

Virginia Department of Agriculture and Consumer Services Status of Agricultural Drought

Overview

According to the USDA crop weather report for the week ending November 11, 2007, colder temperatures have begun to set in across the Commonwealth as producers try to harvest the last of the soybeans and cotton. Topsoil moisture was generally adequate. Pastures and hayfields attempted to revive themselves since the increase in soil moisture but killing frosts have prevented significant regrowth. Livestock were able to take advantage of the regrowth in pastures, which reduced the need for supplemental feeding. The soybean harvest is nearing its end with yields varying. Producers have reported that yields have been better than initially predicted. The cotton harvest is almost complete. Small grain planting is moving along at a rapid pace with the recent increase in soil moisture. During the week ending November 11, 2007, 47% of top soil was short to very short.

Impact on Crops:

Nursery/Horticulture:

- Virginia's nurserymen and landscapers report that even though there has been some rain across the state, most areas of Virginia are still far behind on year-to-date rainfall. If Virginia continues with a dry winter, next spring will be very difficult for the nursery and landscape industries. Wholesale and retail nursery stock growers have had very slow sales this fall and are stuck with excess inventory, especially seasonal color plants that landscapers are not putting out because of watering/maintenance issues. Many nurserymen who normally have backlogs on orders by this time of the year are filling orders within a day or two of receipt of a new order. Retail dealers are also experiencing a major reduction in sales for the fall. Additionally, the Virginia Nursery and Landscape Association reports that the consensus of a recent industry conference call discussion was that there will be market losses for the entire Southeast region of the United States if the current drought conditions continue for any period of time.

Hay Crop:

- Cuttings of hay have been reduced as much as 50% (first cutting) while second cuttings have been nonexistent in some areas. Silage crop of corn is down by 25-30% with less nutritive value. Pastures are brown, non-productive

and overgrazed. Fall crops have been adversely affected unless irrigated. Recent rains have certainly helped both the pastures and fall crops, but more rain is needed.

- The drought conditions have led to hay shortages, not only in Virginia but throughout much of the country, which in turn has led to substantially higher hay prices. Many livestock producers have been forced to sell more of their cattle than usual because of hay shortages and the high price of hay. As a result of the higher number of animals being sold, the price of cattle has dropped.

Impact on Dairy:

- Most of the western dairy region in the state received from 3 to 4 inches of rain from October 24-27. This was too late to impact the feed supply for the winter, but did significantly reduce the risk of fires and provided the moisture so that small grain already planted could germinate.
- Feed supplies are still short and prices are high. Dairymen who utilize fall pastures are feeding hay reserved for the winter earlier than expected. This will result in some dairymen running out of feed in late winter and early spring and even higher feed prices will probably develop by spring.

Impact on Livestock:

- The regional laboratories have so far not seen an increase in toxicologic or other cases that could be attributed to the drought conditions. There is little grass for animals to graze this fall and the hay crop was poor. Starvation cases are projected to increase and perhaps some toxicity cases will rise once the weather gets cold and wet, especially in February and March.
- Some feeder and stocker cattle have been sold earlier than normal and more culling is occurring. Many producers are feeding more hay than usual, increasing production costs. Some beef farmers are feeding hay as if it is the middle of winter and many hay supplies have become dangerously low. Many pastures are significantly overgrazed, which will result in diminished productivity when rains return and may cause an increase in the need for pasture renovations.
- Many cattle at livestock markets are underweight and have very low body condition scores. An increase in the number of animal welfare complaints involving livestock is beginning to occur and is expected to rise. Decreased reproductive performance may result in losses in future calf and lamb crops.

Impact on Water:

- Some shallow wells have dried up, while all are extremely low. Reduced stream flows and water levels in farm ponds have placed greater demands on farm wells that supply drinking water to livestock.

Disaster Designations

Due to the extreme agricultural drought, 93 Virginia counties and 34 independent cities have received a Secretarial disaster designation as a primary natural disaster area. York and Arlington counties and the independent cities of Alexandria, Bristol, Falls Church, Poquoson, and Norton were named contiguous disaster areas.

Waivers for Hauling of Emergency Supplies

At the request of VDACS, VDOT and DMV have jointly authorized a temporary waiver of registration and license requirements along with normal weight and width restrictions for the hauling of hay and feed to the counties that have been designated natural disaster areas by the U.S. Secretary of Agriculture. The waiver also pertains to the contiguous counties. In addition, VDEM has authorized appropriate motor carrier exemptions to hours worked as prescribed by the Code of Federal Regulations and corresponding state regulations throughout the Commonwealth for carriers transporting emergency supplies destined for the affected localities. Both waivers became effective at 6 a.m. on August 11 and will remain in effect through December 1, 2007.

Virginia Department of Environmental Quality Condition of Major Reservoirs

Precipitation in late October and early November has raised and stabilized the levels of many major reservoirs in the Commonwealth.

Kerr Reservoir is at 295.6 feet msl, 1.5 feet below the guide curve. The project has gained 2.6 feet in the past month. The Southeastern Power Administration is no longer purchasing power on the open market and is making the minimum amount of hydroelectric power to fulfill their contracts. Prior to the recent rain inflow was approximately equal to outflow. Water quality and salinity levels in the lower Roanoke River in North Carolina remain at acceptable levels.

Lake Moomaw is currently at 1559 feet msl, 23 feet below full and has 16% of its conservation pool remaining. At the request of the Secretary of Natural Resources the U.S. Army Corps of Engineers has reduced the release from the lake to 100 cfs. Current inflow is on the upswing due to the rainfall and at the time of writing was 161 cfs. Given the limited drainage area and large drawdown, this reservoir will probably be the slowest to refill. Our goal is to refill the reservoir by spring.

Smith Mountain Lake is at 793.1 feet; 1.9 feet below full and has risen 1.8 feet in the past month. The lake level is currently steady and it appears the rainfall of November 15, 2007 will do little to change that as inflows are approximately equal to outflow. The project is operating under variance and is currently releasing 400 cfs instead of 650 cfs. This saves about a 0.9 feet of water for each month that the variance is in effect. The variance does not have an expiration date.

The system of reservoirs owned by Rivanna Water and Sewer Authority is currently 88% full. This system remains in a drought warning phase which is the second stage of a three stage conservation program. The system's reservoirs have gained back 8 % of their storage in the last month.

Lake Anna is above 248 feet msl and is releasing the normal 40 cfs into the North Anna River.

United State Geological Survey Streamflow and Ground Water Levels

Streamflow levels have improved somewhat since the last report due to precipitation in late October and early November. Streamflows are declining, but have not reached levels that existed in early October. It is anticipated that streamflows will continue to decline without additional periodic precipitation. The recent precipitation produced very little runoff, but did reduce the soil-moisture deficit. The extended leaf-out and higher temperatures have caused stream recessions to be greater than normal for this time of year. Streamflow conditions based on daily values for November 18th 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. Current conditions are generally lower than depicted by seven day average stream flows as flows continue to decline.

Ground water levels in water-table wells responded as expected to the October-November rains. A few well levels increased slightly, but most levels continued to decline at a reduced rate. Continued higher-than-normal evapotranspiration and extreme soil-moisture deficit utilized most of the precipitation before it could infiltrate to the ground-water system. A positive note is that the soil moisture is now higher than it has been for most of the year which may allow more of any future winter precipitation to infiltrate into the ground-water system. Ground water levels based on conditions on November 18th are presented in Appendix H.

If we have higher than normal temperatures and reduced rainfall through the winter recharge season, we will begin next spring well below normal with ground-water storage and streamflow will be much below normal.

Department of Forestry

Cooler weather and recent rains have helped to reduce the overall threat of wildfire. The improving conditions allowed the statewide ban on open burning to be lifted on November 16th. Since October 15th, the Department of Forestry has responded to 120 wildfires which burned 859 acres and damaged or destroyed 3 homes and 5 other outbuildings.

Although the fire danger has dropped below the critical stage, conditions still remain dryer than normal for this time of year. Department of Forestry regional offices across the state are now reporting Keech-Byram drought indices (KBDI) in a range of 195 – 446, with the driest readings at the agencies Abingdon Regional Office. The KBDI index is a measure of soil moisture which has consistently shown a close correlation to wildfire activity and the difficulty of fire control. The index ranges from a low of 0, which means total ground saturation, up to a maximum of 800, which means no soil moisture is present. On October 15, 2007, the KBDI readings at the same Department of Forestry regional offices ranged from 448 – 714.

Looking ahead, there is a low to moderate threat of any additional significant wildfire activity through early December. Predictions of a drier and warmer than normal winter brings a growing concern for the Commonwealth's normal spring wildfire season (February 15 – April 30), however it is early to begin anything other than normal agency preparations to ensure personnel and equipment readiness.

APPENDIX A

Precipitation departures by Drought Evaluation Region.

PRELIMINARY PRECIPITATION SUMMARY

Prepared:
11/16/07

DROUGHT REGION	OBSERVED	Nov 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1 Big Sandy	1.30	1.64	-0.34	79%
2 New River	0.35	1.52	-1.16	23%
3 Roanoke	0.31	1.68	-1.37	19%
4 Upper James	0.30	1.68	-1.38	18%
5 Middle James	0.35	1.76	-1.40	20%
6 Shenandoah	1.07	1.53	-0.46	70%
7 Northern Virginia	1.36	1.71	-0.35	79%
8 Northern Piedmont	0.76	1.90	-1.14	40%
9 Chowan	0.39	1.56	-1.16	25%
10 Northern Coastal Plain	0.65	1.57	-0.92	42%
11 York-James	0.80	1.69	-0.89	47%
12 Southeast Virginia	0.56	1.54	-0.97	37%
13 Eastern Shore	0.83	1.47	-0.65	56%
Statewide	0.63	1.62	-0.99	39%

DROUGHT REGION	OBSERVED	Oct 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1 Big Sandy	3.03	4.52	-1.49	67%
2 New River	4.20	4.69	-0.49	90%
3 Roanoke	4.27	5.39	-1.12	79%
4 Upper James	2.67	4.93	-2.26	54%
5 Middle James	4.26	5.60	-1.34	76%
6 Shenandoah	3.47	4.72	-1.24	74%
7 Northern Virginia	5.02	5.19	-0.17	97%
8 Northern Piedmont	3.27	5.89	-2.62	56%
9 Chowan	3.49	5.14	-1.65	68%
10 Northern Coastal Plain	6.03	5.08	0.95	119%
11 York-James	4.64	5.22	-0.58	89%
12 Southeast Virginia	5.83	5.20	0.64	112%
13 Eastern Shore	4.19	4.68	-0.49	90%
Statewide	4.02	5.12	-1.10	79%

DROUGHT REGION		OBSERVED	Sep 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	4.28	7.98	-3.70	54%
2	New River	5.84	8.10	-2.26	72%
3	Roanoke	6.35	9.62	-3.28	66%
4	Upper James	4.92	8.43	-3.51	58%
5	Middle James	5.07	9.73	-4.66	52%
6	Shenandoah	5.42	8.39	-2.97	65%
7	Northern Virginia	6.19	9.26	-3.07	67%
8	Northern Piedmont	4.26	10.17	-5.91	42%
9	Chowan	4.45	9.57	-5.11	47%
10	Northern Coastal Plain	7.27	9.17	-1.90	79%
11	York-James	6.54	10.12	-3.58	65%
12	Southeast Virginia	6.56	9.63	-3.07	68%
13	Eastern Shore	5.75	8.29	-2.54	69%
	Statewide	5.44	9.12	-3.68	60%

DROUGHT REGION		OBSERVED	Aug 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	5.47	11.81	-6.34	46%
2	New River	7.03	11.41	-4.37	62%
3	Roanoke	7.17	13.34	-6.17	54%
4	Upper James	6.37	11.76	-5.39	54%
5	Middle James	7.79	13.55	-5.76	57%
6	Shenandoah	8.19	11.72	-3.52	70%
7	Northern Virginia	8.05	13.11	-5.06	61%
8	Northern Piedmont	6.64	13.99	-7.35	47%
9	Chowan	6.46	13.88	-7.42	47%
10	Northern Coastal Plain	8.72	13.03	-4.31	67%
11	York-James	8.87	14.99	-6.12	59%
12	Southeast Virginia	10.04	14.75	-4.71	68%
13	Eastern Shore	8.25	12.16	-3.91	68%
	Statewide	7.31	12.95	-5.64	56%

DROUGHT REGION		OBSERVED	Jul 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	9.96	16.29	-6.33	61%
2	New River	9.96	15.20	-5.24	66%
3	Roanoke	10.45	17.73	-7.28	59%
4	Upper James	8.71	15.80	-7.09	55%
5	Middle James	10.14	17.96	-7.81	56%
6	Shenandoah	10.19	15.48	-5.29	66%
7	Northern Virginia	10.51	16.88	-6.36	62%
8	Northern Piedmont	8.17	18.39	-10.22	44%
9	Chowan	9.52	18.39	-8.87	52%
10	Northern Coastal Plain	10.14	17.48	-7.34	58%
11	York-James	12.31	20.09	-7.78	61%
12	Southeast Virginia	13.35	19.82	-6.47	67%
13	Eastern Shore	10.33	16.16	-5.83	64%
	Statewide	10.04	17.29	-7.25	58%

DROUGHT REGION		OBSERVED	Jun 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	12.70	20.43	-7.73	62%
2	New River	12.99	19.05	-6.05	68%
3	Roanoke	13.37	21.62	-8.25	62%
4	Upper James	12.46	19.51	-7.05	64%
5	Middle James	13.50	21.47	-7.97	63%
6	Shenandoah	13.46	19.19	-5.72	70%
7	Northern Virginia	12.45	20.74	-8.28	60%
8	Northern Piedmont	10.32	22.40	-12.08	46%
9	Chowan	11.73	22.04	-10.30	53%
10	Northern Coastal Plain	11.99	21.04	-9.05	57%
11	York-James	14.50	23.50	-9.00	62%
12	Southeast Virginia	16.57	23.43	-6.86	71%
13	Eastern Shore	15.59	19.14	-3.55	81%
	Statewide	12.90	21.08	-8.18	61%

DROUGHT REGION		OBSERVED	May 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	14.45	25.25	-10.80	57%
2	New River	14.77	23.26	-8.48	64%
3	Roanoke	15.35	25.95	-10.60	59%
4	Upper James	14.48	23.79	-9.31	61%
5	Middle James	15.96	25.71	-9.75	62%
6	Shenandoah	15.65	23.03	-7.37	68%
7	Northern Virginia	13.72	25.08	-11.36	55%
8	Northern Piedmont	12.41	26.62	-14.21	47%
9	Chowan	14.62	26.13	-11.51	56%
10	Northern Coastal Plain	13.24	25.20	-11.96	53%
11	York-James	16.05	27.77	-11.72	58%
12	Southeast Virginia	18.53	27.29	-8.75	68%
13	Eastern Shore	17.33	22.66	-5.33	76%
	Statewide	14.93	25.34	-10.41	59%

DROUGHT REGION		OBSERVED	Apr 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	18.92	29.01	-10.09	65%
2	New River	17.89	26.81	-8.91	67%
3	Roanoke	18.56	29.75	-11.19	62%
4	Upper James	17.98	27.19	-9.21	66%
5	Middle James	19.19	29.05	-9.85	66%
6	Shenandoah	19.23	25.95	-6.72	74%
7	Northern Virginia	17.44	28.38	-10.93	61%
8	Northern Piedmont	15.51	29.91	-14.40	52%
9	Chowan	19.05	29.56	-10.50	64%
10	Northern Coastal Plain	16.95	28.29	-11.34	60%
11	York-James	20.09	31.07	-10.98	65%
12	Southeast Virginia	23.05	30.54	-7.49	75%
13	Eastern Shore	21.88	25.58	-3.70	86%
	Statewide	18.57	28.76	-10.19	65%

DROUGHT REGION		OBSERVED	Mar 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	22.05	33.26	-11.21	66%
2	New River	21.93	30.48	-8.54	72%
3	Roanoke	22.25	34.02	-11.77	65%
4	Upper James	21.62	30.98	-9.36	70%
5	Middle James	22.24	33.11	-10.86	67%
6	Shenandoah	22.11	29.15	-7.04	76%
7	Northern Virginia	20.60	32.04	-11.44	64%
8	Northern Piedmont	17.94	33.72	-15.78	53%
9	Chowan	21.62	33.93	-12.31	64%
10	Northern Coastal Plain	19.76	32.57	-12.81	61%
11	York-James	21.81	35.76	-13.95	61%
12	Southeast Virginia	24.99	34.74	-9.75	72%
13	Eastern Shore	23.66	29.89	-6.23	79%
	Statewide	21.64	32.80	-11.16	66%

DROUGHT REGION		OBSERVED	Feb 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	23.45	36.84	-13.39	64%
2	New River	23.58	33.41	-9.82	71%
3	Roanoke	24.30	37.33	-13.03	65%
4	Upper James	24.07	33.83	-9.76	71%
5	Middle James	24.21	36.23	-12.01	67%
6	Shenandoah	24.16	31.56	-7.39	77%
7	Northern Virginia	23.44	34.71	-11.27	68%
8	Northern Piedmont	20.38	36.69	-16.31	56%
9	Chowan	23.79	37.10	-13.31	64%
10	Northern Coastal Plain	22.26	35.71	-13.45	62%
11	York-James	23.56	39.29	-15.73	60%
12	Southeast Virginia	27.26	38.24	-10.98	71%
13	Eastern Shore	26.45	33.08	-6.64	80%
	Statewide	23.73	35.93	-12.20	66%

DROUGHT REGION		OBSERVED	Jan 1, 2007 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	26.63	40.57	-13.94	66%
2	New River	26.54	36.62	-10.07	72%
3	Roanoke	28.18	41.25	-13.07	68%
4	Upper James	27.08	37.11	-10.03	73%
5	Middle James	27.79	39.89	-12.10	70%
6	Shenandoah	25.72	34.41	-8.68	75%
7	Northern Virginia	25.68	37.99	-12.30	68%
8	Northern Piedmont	22.90	40.21	-17.31	57%
9	Chowan	26.31	41.21	-14.90	64%
10	Northern Coastal Plain	26.50	39.46	-12.96	67%
11	York-James	26.17	43.43	-17.26	60%
12	Southeast Virginia	30.43	42.40	-11.97	72%
13	Eastern Shore	28.62	36.64	-8.03	78%
	Statewide	26.79	39.57	-12.78	68%

DROUGHT REGION		OBSERVED	Dec 1, 2006 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	28.62	44.21	-15.59	65%
2	New River	28.33	39.33	-11.00	72%
3	Roanoke	30.35	44.50	-14.15	68%
4	Upper James	29.07	40.06	-10.99	73%
5	Middle James	29.37	43.06	-13.68	68%
6	Shenandoah	26.84	37.00	-10.15	73%
7	Northern Virginia	27.35	41.09	-13.74	67%
8	Northern Piedmont	24.65	43.49	-18.84	57%
9	Chowan	28.48	44.23	-15.75	64%
10	Northern Coastal Plain	28.21	42.74	-14.54	66%
11	York-James	27.99	46.82	-18.83	60%
12	Southeast Virginia	32.88	45.58	-12.70	72%
13	Eastern Shore	31.37	39.88	-8.52	79%
	Statewide	28.64	42.69	-14.05	67%

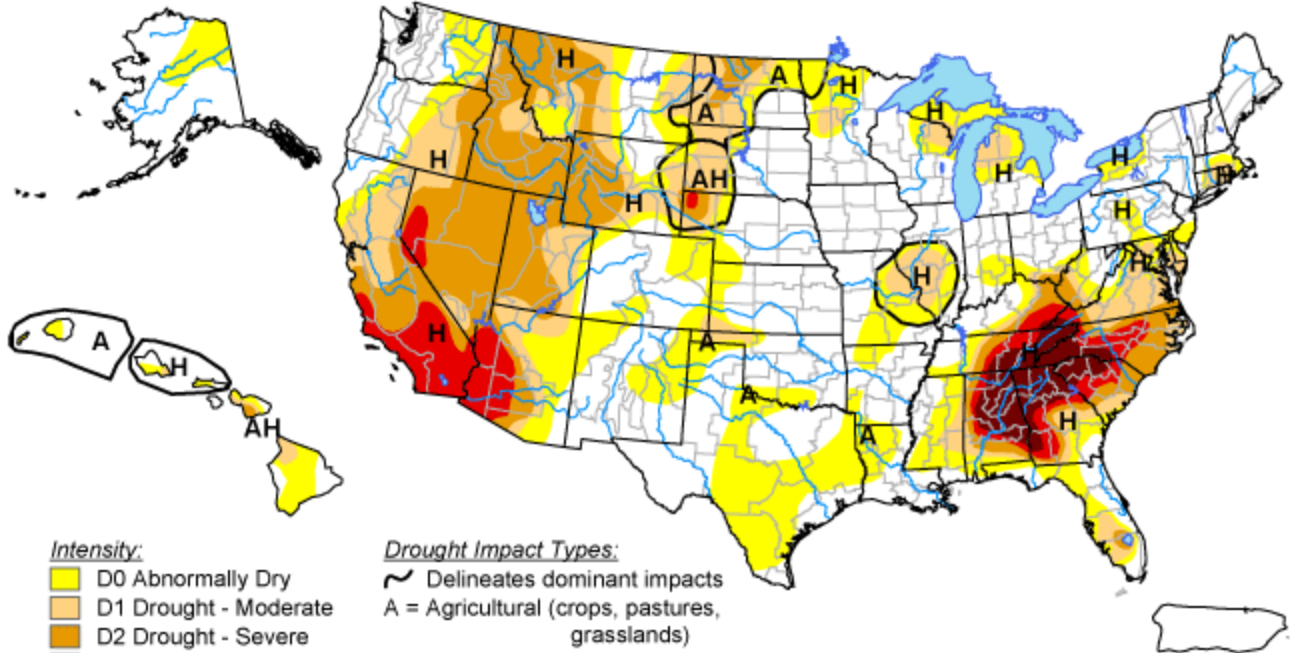
DROUGHT REGION		OBSERVED	Nov 1, 2006 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	31.38	47.49	-16.11	66%
2	New River	32.28	42.36	-10.08	76%
3	Roanoke	35.75	47.87	-12.12	75%
4	Upper James	32.85	43.41	-10.56	76%
5	Middle James	35.11	46.58	-11.47	75%
6	Shenandoah	30.99	40.04	-9.05	77%
7	Northern Virginia	33.14	44.48	-11.33	75%
8	Northern Piedmont	30.95	47.27	-16.32	65%
9	Chowan	35.85	47.34	-11.49	76%
10	Northern Coastal Plain	33.51	45.87	-12.36	73%
11	York-James	33.65	50.16	-16.50	67%
12	Southeast Virginia	40.49	48.64	-8.15	83%
13	Eastern Shore	36.24	42.82	-6.58	85%
	Statewide	33.80	45.92	-12.12	74%

DROUGHT REGION		OBSERVED	Oct 1, 2006 NORMAL	- Nov 15, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	36.35	50.37	-14.02	72%
2	New River	37.26	45.53	-8.27	82%
3	Roanoke	41.79	51.58	-9.79	81%
4	Upper James	39.78	46.66	-6.88	85%
5	Middle James	42.80	50.42	-7.62	85%
6	Shenandoah	36.23	43.23	-7.00	84%
7	Northern Virginia	37.93	47.96	-10.03	79%
8	Northern Piedmont	37.48	51.26	-13.78	73%
9	Chowan	43.55	50.92	-7.36	86%
10	Northern Coastal Plain	39.58	49.38	-9.79	80%
11	York-James	41.65	53.69	-12.04	78%
12	Southeast Virginia	45.56	52.30	-6.74	87%
13	Eastern Shore	43.18	46.03	-2.86	94%
	Statewide	40.04	49.42	-9.38	81%

APPENDIX B

U.S. Drought Monitor

November 13, 2007
Valid 7 a.m. EST



Intensity:

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

Drought Impact Types:

- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

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

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

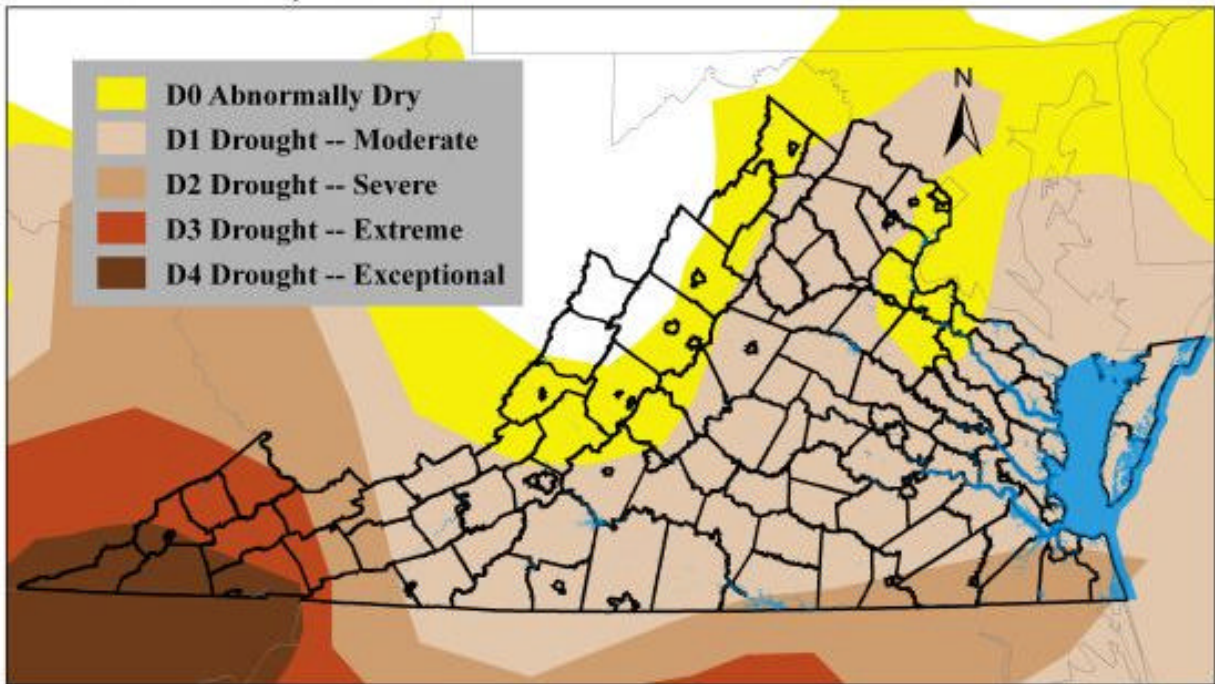


Released Thursday, November 15, 2007

Author: Douglas Le Comte, CPC/NOAA

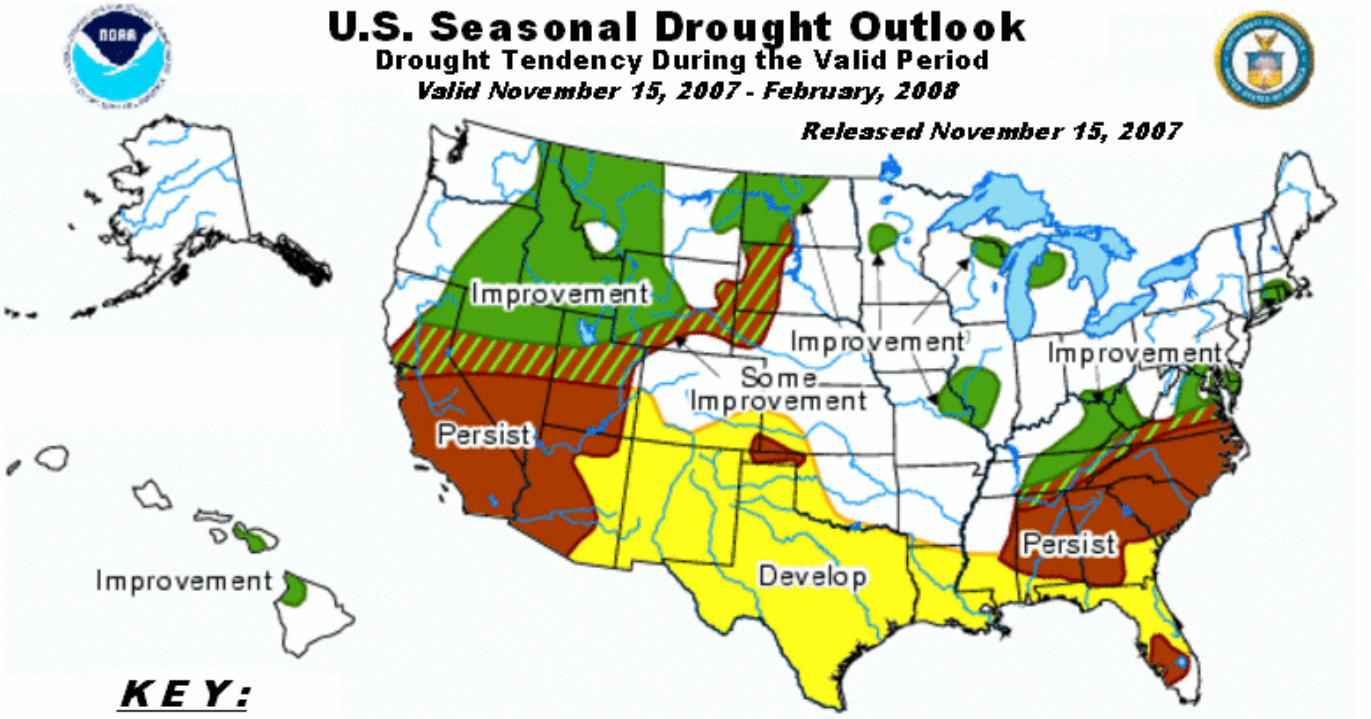
APPENDIX C




U.S. Drought Monitor - Virginia November 13, 2007



Note: The U.S. Drought Monitor focuses on broad-scale conditions. Local conditions may vary. Click on map to view complete U.S. Drought Monitor graphic.

APPENDIX D



- 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

ODW Drought Situation Report

Date: 11/15/07

	Restriction totals
Mandatory	27
Voluntary	37
Total	64

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

PWSID	Waterworks	Source Name	Restrictions	Situation	Population Served
1071455	Giles County PSA	well	N	S 11/14/07: Well water level at 100 ft above pump at startup. Drops slightly during pumping. 10/05/07: started using secondary wells, Orchard & Tannery, to supplement. Still in good shape.	8,500
1077240	Town of Fries	Eagle Bottom Creek & New River	N	S 11/13/07: the Creek impoundment now overflowing. Creek flow back to normal fall weather rate. Significant rain 10/22-10/26. They exercised their auxiliary New River withdrawal portable pump on 8/16/07; it is ready to use if needed.	614
1105200	Town of Jonesville	Wynn Spring #1 and Slemp Spring	N	S 11/15/07: Springs' flowrates are decreasing. Normal WTP operating rate = 380 gpm; down to 300 gpm and increased operating hours to 17-19 hrs/day. Using all of Wynne Spring production (238 gpm) and part of the production of Slemp spring.	1,100
1105400	Lee County PSA	Blue Springs	N	S 11/16/07: Spring flow has fallen below the established safe yield. Safe yield = 250,000 gpd; current spring yield = 230,000 gpd. WTP treating all the water the intake can capture (approx. 200,000 gpd). At this rate, tank levels are staying at about 2/3 full.	2,500
1105400	Lee County PSA	KVS Quarry	N	W 11/15/07: Water level in quarry is dropping about 1/2 to 1 inch per day; currently at 194 inches below catwalk and 12 inches above pumps. Quarry water level up 2 inches on 11/14/07 following < 1 inch of rain previous day. Considering installing floating pump station @ cost of \$65,000.	2,500
1155635	Town of Pulaski	Two impoundments and Peak Creek	N	S 11/13/07: Gatewood down 3 ft. Hogans down 8 ft. Working on drought response plan with NRV PDC/Kevin Byrd. This plan identified 20 ft down as the critical point for reservoir level.	9,452
1167050	Russell County Water & Sewerage Authority	springs, wells, Clinch River	N	S 11/16/2007: Source average monthly production reductions: Crystal well from 65 to 43 gpm; Sargent Spring from 200 to 80 gpm; Seven Spring well 1 from 24 to 15 gpm; Seven Springs from 200 to 77 gpm; Straight Hollow mines from 200 to 105 gpm. Purchasing supplemental water from St. Paul at an average of 20 gpm. Accountability increased from 40% in August to 54% in September. St. Paul has adequate surplus capacity to provide up to 50% of RCWSA average daily demand.	5,565

1169725	Town of Nickelsville	Wells	V	S 11/16/07: Well production had dropped and voluntary conservation notice issued 8/31/07. Well production holding steady now. Well #1 is used occasionally now. Well #3 drops to ~ 6 gpm(safe yield=13). Well #6 drops to ~8-10 gpm(safe yield=21 gpm). Well #4 & 5 no drop in output. Working on adding two new wells: (1) Park well's bacts were all negative. Park well now being used. (2) New Tank well is drilled and grouted; needs 48-hr yield test. Repairing leaks (accountability is satisfactory).	900
1185061	Town of Bluefield	impoundment of Bluestone River	N	S 11/15/2007: Water levels are up since 11/01/07 report. <i>The WTP is currently able to withdraw at its design capacity of 1.5 MGD.</i>	6,138
1185625	Town of Pocahontas	Abbs Valley Creek	V	S 11/15/2007: Flow in source water, Abbs Valley Creek is now overflowing the check dam. WTP operates 12 hours/day on average. It can be supplied by Greater Tazewell WTP if there is a need to reduce demand at Pocahontas. Likewise the Greater Tazewell WTP could supplement supply to Pocahontas through an existing interconnection via the TCPSPA Boissevain storage tank, which is 72 feet higher in elevation than the Pocahontas tanks. Town issued call for voluntary conservation on September 28, 2007.	1,200
1185762	Greater Tazewell	Lake Witten, Clinch River, & impoundment of Cox Brance	N	S 11/15/2007: Flow in all three raw water sources appears to be up. The smallest source, Cox Branch is lowest, with water now overflowing the dam. WTP drawing from storage in Lake Witten, which is down several feet. No current problems in meeting demand.	11,964
1195050	Town of Appalachia	reservoir	M	W 11/15/07: down 15'-4" from overflow. 29.5 MG left, 55 days ± 10 left. Voluntary conservation instituted week of 9/24/07. Mandatory conservation instituted 11/01/07. Status of Powell River withdrawal to supplement reservoir: Applying for temp river withdrawal permit; now laying on-ground pipe from Powell River to reservoir (1/4 mile); still must set pumps and run power to pumps; sampled river for complete chemical analysis on 11/07/07.	3,280
1195100	Town of Big Stone Gap	Big Cherry Reservoir	N	S 11/16/07: Received 1.25 inches of rain this week. down 15 ft from overflow; not enough data on new dam to determine if this is abnormal. 185 MG left, 65 days, including 1 MGD for flow -by.	9,000
1195950	Town of Wise	reservoir	N	W 11/14/07: down 9'- 3.5", 117 MG left, 194 days left (@ 0.6 MGD). Slightly below avg. level for this time of year. Have not used auxiliary well yet; its pump is being repaired.	6,375
1720076	City of Norton	reservoirs	N	W 11/13/07: Upper reservoir down 20.5 ft; lower reservoir down 16 ft from overflow. 46.2 MG, approx 90 days left. Purchasing more water from Wise County PSA. Worse than normal for this time of year.	4,247
2003250	Albemarle County / Crozet	Beaver Creek Reservoir	M	S - Beaver Creek Reservoir is currently down 2.1 feet from normal full. Drought warning and mandatory restrictions in effect August 15	25
2003600	Charlottesville/Albemarle County	Sugar Hollow and Ragged Mountain Reservoirs (Observatory WTP)	M	S - The Sugar Hollow reservoir is down 12.4 feet from full. Ragged Mountain reservoir is 1.1 feet below full. Drought warning and mandatory restrictions in effect August 15.	25
2003675	Albemarle County / Scottsville	Totier Creek Reservoir	M	S - The Totier Creek reservoir is full. Drought warning and mandatory restrictions in effect August 15	25
2003725	Charlottesville/Albemarle County	South Fork Rivanna (South Rivanna WTP)	M	S - The South Fork Rivanna reservoir is full. Drought warning and mandatory restrictions in effect August 15	25
2023730	Dal-Nita Hills	Drilled Well	V	S - Well yield has dropped to 4 to 5 gpm. Owner is hauling water, as needed, to keep storage tank full. Letter provided to the customers advising them of the situation.	35 homes

2065250	Fluvanna Correctional Center for Women	Mechunk Creek and on-site Raw Water Reservoir	V	S - Reservoir is at ~65% of full capacity (~26 MG remain). Sporadic withdrawals from Mechunk Creek currently due to low levels. Moderate Drought Condition has been declared. Non-essential water use has been reduced.	1,650
2069250	Frederick County Sanitation Authority	Stephens City and Clearbrook Quarries; City of Winchester	V	S - Voluntary conservation has been requested.	33,330
2125325	NCSA - Lovingston	Black Creek Reservoir and Wells	V	S - Mandatory restrictions lifted October 29, reservoir back to full	900
2125065	NCSA - Gladstone	Spring	V	S - Mandatory restrictions lifted October 29	90
2125650	NCSA - Schuyler	Johnson's Branch	V	S - Mandatory restrictions lifted October 29	300
2125910	NCSA - Wintergreen	Lake Monacan	V	S - Lake Monacan system at 89% of full. Mandatory restrictions lifted October 29.	3,800
2171750	Town of Strasburg	North Fork Shenandoah River	V	S - Voluntary conservation has been requested. Stream flow approx 88 cfs on 14 November.	4,017
2187406	Front Royal	South Fork, Shenandoah River	N	W - Mean stream flow reported at 23.8% (381 cfs) on 13 November. VWPP requires conservation controls to be implemented at 24% (voluntary), 17% (mandatory), 15% (emergency), and 13% (rationing) of mean stream flow based on 14-day running average.	12,500
2560100	Town of Clifton Forge	Smith Creek	V	S - Voluntary conservation has been requested.	4,679
2660345	City of Harrisonburg	North River, Dry River/Switzer Reservoir (Rawley Springs)	V	First Report - 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.	
2840500	Winchester, City of	North Fork Shenandoah River	V	S - Voluntary conservation requested on 1 October. Stream flow approx 108 cfs on 14 November.	27,485
3053280	DCWA Central (Dinwiddie County)	Appomattox River Water Authority (ARWA)	M	S	6,800
3081550	GCWSA - Jarratt	Nottoway River	N	S - Waterworks has increased work hours per day to decrease withdrawal rate, performed work at the intake to maximize capacity, and inquired about future use of existing inactive groundwater sources.	7,190
3093120	Isle of Wight County	Suffolk	V	B - follows Suffolk's lead on conservation.	1,284
3095490	JCSA Central	wells	V	S - this is the "annual" restriction of use, due to distribution system delivery problems (not due to source issues)	44,760
3149700	Puddledock Road (Prince George County)	ARWA	M	S	6,525
3550050	Chesapeake - Western Branch system	City of Portsmouth	V	S-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.	36,381
3550051	Chesapeake	Northwest River, City of Norfolk Raw Water	V	S-City Council voted to go to voluntary conservation city-wide - took effect on 24 Oct 2007. Chlorides have lowered in river. Level not affected river is tidal influenced.	105,525
3550052	Chesapeake - South Norfolk system	City of Norfolk	V	S-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.	33,602
3570150	Colonial Heights	ARWA	M	S	17,286
3595250	Emporia	Meherrin River	N	S - Water is going over the dam.	5,600
3670800	Virginia-American Water Company (Hopewell)	Appomattox & James Rivers	N	S - Raw water quality is biggest concern at this time as higher salinity is reaching the intake from the Bay.	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: reservoir levels improved as a result of recent rains (currently at 70.3% full); waterworks still cautiously considering whether to implement initial stages of conservation - will review in two weeks before deciding	406,000
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Law son, Whitehurst, and Wright. Lake Gaston.	V	B - As of 11/13, reservoirs at 78.8% (up from 77.2% on 10/28). Historic reservoir capacity is 82.1%. Avg. pumping: Lake Gaston = 59 MGD; Blackwater River = 14.1 MGD; Nottoway River = 19.3 MGD; Deep wells = 3.8 MGD; Spillway elev.: Western Branch -4.3 ft; Lake Prince -2.0 ft; Burnt Mills -6.2 ft; Lake Wright 0.1 ft; Lake Smith +0.2 ft; Blackwater River +2.8 ft; Nottoway River +4.1 ft. Called for voluntary conservation 11/2/07.	261,250 - Primary / 755,617 - Total including consecutive systems (Va Beach + military bases).
3730750	Petersburg	ARWA	M	S - Mandatory restrictions as of 10/29.	39,386
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	V	B - As of 11/09, reservoirs at 82% (up from 76% on 10/26). Median reservoir capacity is 92%, average capacity is 86% (period of 1969-2006). Both emergency wells are ON and pumping 3.0 MGD. Estimated 185 days of reservoir storage remaining at current pumpage and no rainfall, up from 184 days on 10/26. 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. Reservoir levels look good.	62,562
3810900	Virginia Beach	Norfolk	V	B - obtains water from Norfolk. Called for voluntary conservation on 9/19/07.	423,743
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	M	Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights. Low water levels; mandatory & voluntary restrictions in place.	200,000
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	M	In effect Monday, Oct. 15. purchases water from the City of Richmond and the Appomattox River Water Authority.	263,000
4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N		2,100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	Reservoir at 100%.	8,870
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	M		2,500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	N		9,300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	M		71,000
4085770	SPRING MEADOWS-MEADOW GATE	Groundwater wells	V		2,300
4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	M	Similar to City of Richmond	289,000
4101900	WEST POINT, TOWN	Groundwater	N		3,000

	OF	wells			
4127110	DELMARVA PROPERTIES	Groundwater wells	N		7,700
4145675	POWHATAN COURTHOUSE	Groundwater wells	N		2,600
4193280	COLONIAL BEACH, TOWN OF	Groundwater wells	N		3,300
4760100	RICHMOND, CITY OF	Surface water; James River	M	Low water levels in the James River; under James River Regional Flow Management Plan; counties of Henrico, Chesterfield, Goochland, and Hanover counties purchases water from the City.	197,000
5515050	City of Bedford	Stoney Creek Reservoir and Wells 1 to 5	M	B - water level in reservoir increased from 64 inches down to 46 inches down since last report	6,946
5143210	Town of Gretna	Georges Creek Res	N	S	2,500
5029085	Buckingham County	Troublesome Creek Reservoir	N	B	5,751
5037300	Town of Keysville	Keysville Reservoir	N	B	800
5083550	Town of Halifax	Bannister River Reservoir	N	B	1,389
5780600	Town of South Boston	Dan River	N	B	9,726
5141640	Town of Stuart	South Mayo River	N	B	1,500
5147170	Town of Farmville	Appomattox River	N	B	7,011
5009050	Town of Amherst	Buffalo River	N	B - Recent rains has improved flow in the Buffalo River.	5,076
5011050	Town of Appomattox	Wells	V	S - The Town has noted a significant water level drop in many of their wells. The town is actively looking for additional groundwater sources.	1,708
5019165	Cedar Hills Mobile Home Park	Wells	N	B - Wells not producing enough water. Connected to BCPSCA, Forest Central Water System. Problem resolved.	60
5680200	City of Lynchburg	Pedlar Reservoir and James River	N	B - City is using the Pedlar Reservoir	76,000
5031150	Campbell County Central System	Big Otter River	N	S - stream flow at 53 cfs (well above plant capacity) and they also have an interconnection with Lynchburg.	20,000
5025450	Town of Lawrenceville	Great Creek (with upstream reservoir)	N	S - reservoir level holding steady	4,806
5135160	Town of Crewe	Crystal Lake	N	B	3,500
5111450	Town of Kenbridge	Flat Rock Creek and Offstream Reservoir	N	B	1,400
5067785	Ridgscrest	Wells	N	B - no longer hauling water	52
5067265	Hales Point	Wells	V	B - system still hauling in water to meet demand.	46
5067970	Westlake Towne Center	Wells	V	S - system still hauling water to meet demand.	75
5067937	Stripers Landing	Wells	N	S - One well went dry, have drilled two new wells and hauling water	125
6033425	Lake Caroline	Lake Caroline	V	S -- WTP taken off-line in August for repairs. Subdivision is being served through emergency interconnection with Caroline County- Carmel Church system. County and Lake Caroline jointly asked for voluntary restrictions.	3,370

6047070	Emerald Hill Elementary School	Groundwater	M	S -- School is purchasing and hauling about 6,000 gpd of drinking water from the Town of Culpeper. New well site has been approved by CFO and well has been drilled with 50 gpm well yield. Completion of well and connection to system expected by end of November. Existing well was refurbished and yield increased from 8 gpm to 13 gpm. This problem is indirectly related to the current drought as the source yield was declining previously.	977
6047500	Town of Culpeper	Lake Pelham	V	S -- Reservoir level now at 27 inches below overflow level.	11,500
6059500 and 6059501	Fairfax County Water Authority	Potomac River and Occoquan Reservoir	V	S -- Fairfax Water has minimized withdrawals from the Occoquan Reservoir and maximized withdrawals from Potomac River. Occoquan Reservoir levels remain about the same despite recent rains. FW is providing additional water to LCSA and Prince William County Service Authority to make-up for supply and treatment cut-backs by the City of Fairfax and City of Manassas. Metro Washington area-wide voluntary conservation went into effect 10/3/07.	
6061200	Town of Marshall	Groundwater	M	S -- Well production not capable of meeting demands, including significant system leakage. Water being hauled in at approx 25,000 gpd. Owner (FCWSA) has performed some well work and is considering water line repairs/replacement and addition of new sources and storage.	2,039
6061600	Town of Warrenton	Reservoir on Cedar Run and groundwater	M	S -- Main reservoir level remaining stable due to recent rains. Smaller upstream reservoir at 50% full.	11,107
6107150	Town of Hamilton	Groundwater	V	S	2,000
6107221	LCSA Lenah Farms	Groundwater	V	S	810
6107300	Town of Leesburg	Potomac River	N	S	37,000
6107350	Loudoun County Sanitation Authority	Purchase treated surface water from FCWA (Potomac River) and City of Fairfax (Goose Creek Reservoir)	M	S -- Recent rains maintaining flow in Goose Creek, sufficient for 6 MGD treatment rate. LCSA moving water from 410 zone to 438 zone via pump station.	167,904
6107400	Town of Lovettsville	Groundwater	V	S	1,280
6107450	Town of Middleburg	Groundwater	M	S - Mandatory Water Use Restrictions in place 10/11/07	590
6107600	Town of Purcellville	Hirst Reservoir and groundwater	M	S -- Recent rains sufficient to hold water levels steady but not fill reservoir. Reservoir has less than 60 days storage remaining. Wells are being closely monitored and production remains consistent without any impacts from drought thus far.	6,300
6107650	Town of Round Hill	Groundwater	M	W	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)	M	W -- Mandatory restrictions dictated by Orange's raw water withdrawal permit issued by DEQ.	273
6137400	Town of Gordonsville	Purchase treated surface water from RSA and Town of Orange	V	S -- Mandatory restrictions changed to voluntary restrictions as dictated by Orange's raw water withdrawal permit issued by DEQ.	1,800

6137500	Town of Orange	Rapidan River	V	S -- Mandatory restrictions changed to voluntary restrictions as river flow increased to level above the critical level dictated by raw water withdrawal permit issued by DEQ. 50 MG raw water storage reservoir is full.	4,500
6137999	Rapidan Service Authority - Wilderness and Lake of the Woods	Rapidan River	V	S -- Mandatory restrictions in effect on 10/15/07 changed to voluntary restrictions due to increased river flow above critical level as dictated by RSA's raw water withdrawal permit issued by DEQ	9,818
6153260	Woodbridge Mobile Home Park	Groundwater	M	S -- Waterworks has temporary connection to Prince William County Service Authority main system. This problem is indirectly related to drought as source problems existed previously.	320
6153675	Quantico Marine Corps Base - Mainside	Breckenridge, Lunga, and Gray Reservoirs	N	S	14,525
6600100	City of Fairfax	Goose Creek Reservoir	V	S -- Withdrawals from the offstream Beaver Dam Reservoir remain stopped, with adequate flows coming down Goose Creek. WTP is producing approx 6 MGD with around 2 mgd of the treated water going to LCSA, balance to the City. Still purchasing water from FCWA to make up shortfall in City.	45,000
6685100	City of Manassas	Lake Manassas	M	S -- Mandatory restrictions went into effect 10/25/07. Water level in Lake Manassas remains steady despite recent rains. Withdrawals from Lake Manassas remain at about 7 mgd. Wholesale customers PWCSA and Manassas Park are not taking some water from the City and are obtaining water from FCWA.	37,000
6059500 and 6059501	Fairfax County Water Authority	Potomac River and Occoquan Reservoir	V	S -- Fairfax Water has minimized withdrawals from the Occoquan Reservoir and maximized withdrawals from Potomac River. FW is providing additional water to City of Fairfax, Loudoun County Sanitation Authority, and Prince William County Service Authority to make-up for supply and treatment cut-backs by the City of Fairfax and City of Manassas. Metro Washington area-wide voluntary conservation went into effect 10/3/07.	396,000
6177280 and 6177300	Spotsylvania County	Motts Run Reservoir, Rappahannock River, Ni River Reservoir, and Hunting Run Reservoir (Rapidan River off-stream reservoir)	N	S	37,506
6179100 and 6179775	Stafford County	Smith Lake and Abel Lake	M	S -- Reservoir levels stable due to recent rain with about 100 days of raw water storage remaining. Mandatory restrictions went into effect 9/17/07 and were increased on 10/8/07.	53,086

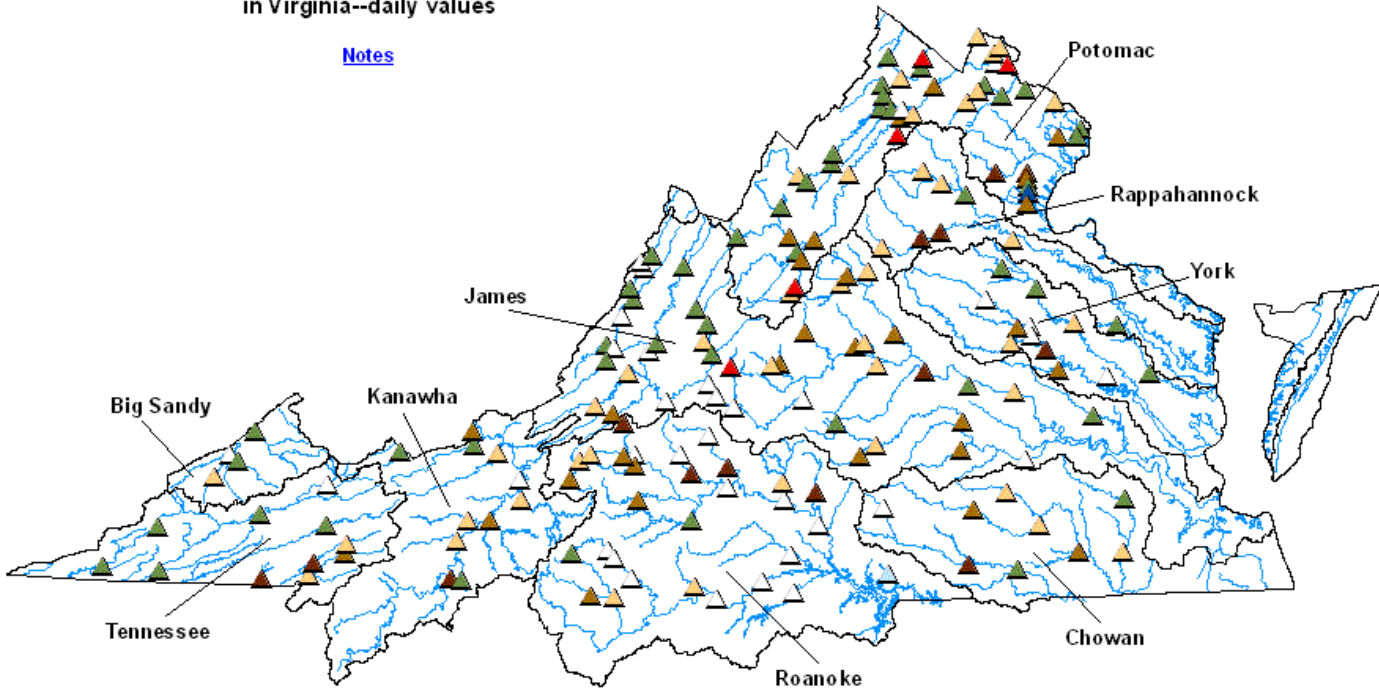
Notes of interest:

- (1) Metropolitan Washington Council of Governments has issued a voluntary conservation advisory for the entire area, including 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 calculated the risk of the need for upstream reservoir releases to be very low – around 2% or less.

APPENDIX F

Streamflow conditions for 11/18/2007
in Virginia--daily values

[Notes](#)



**Streamflow Statistics based on
average flows**

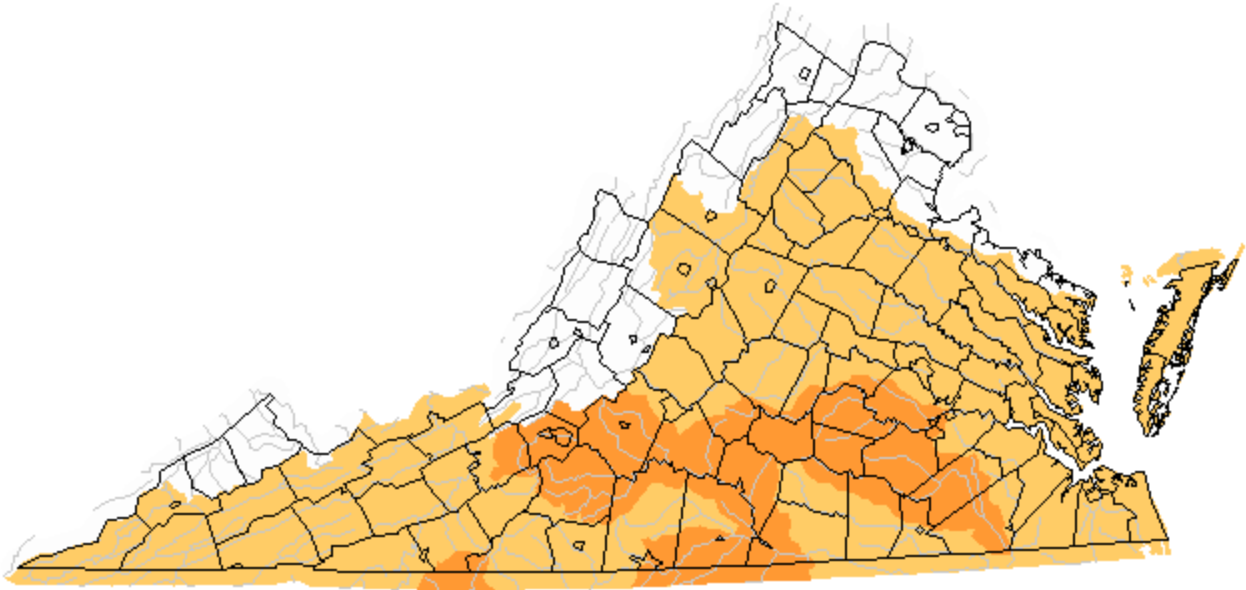
Click on map or table to select River Basin



APPENDIX G

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

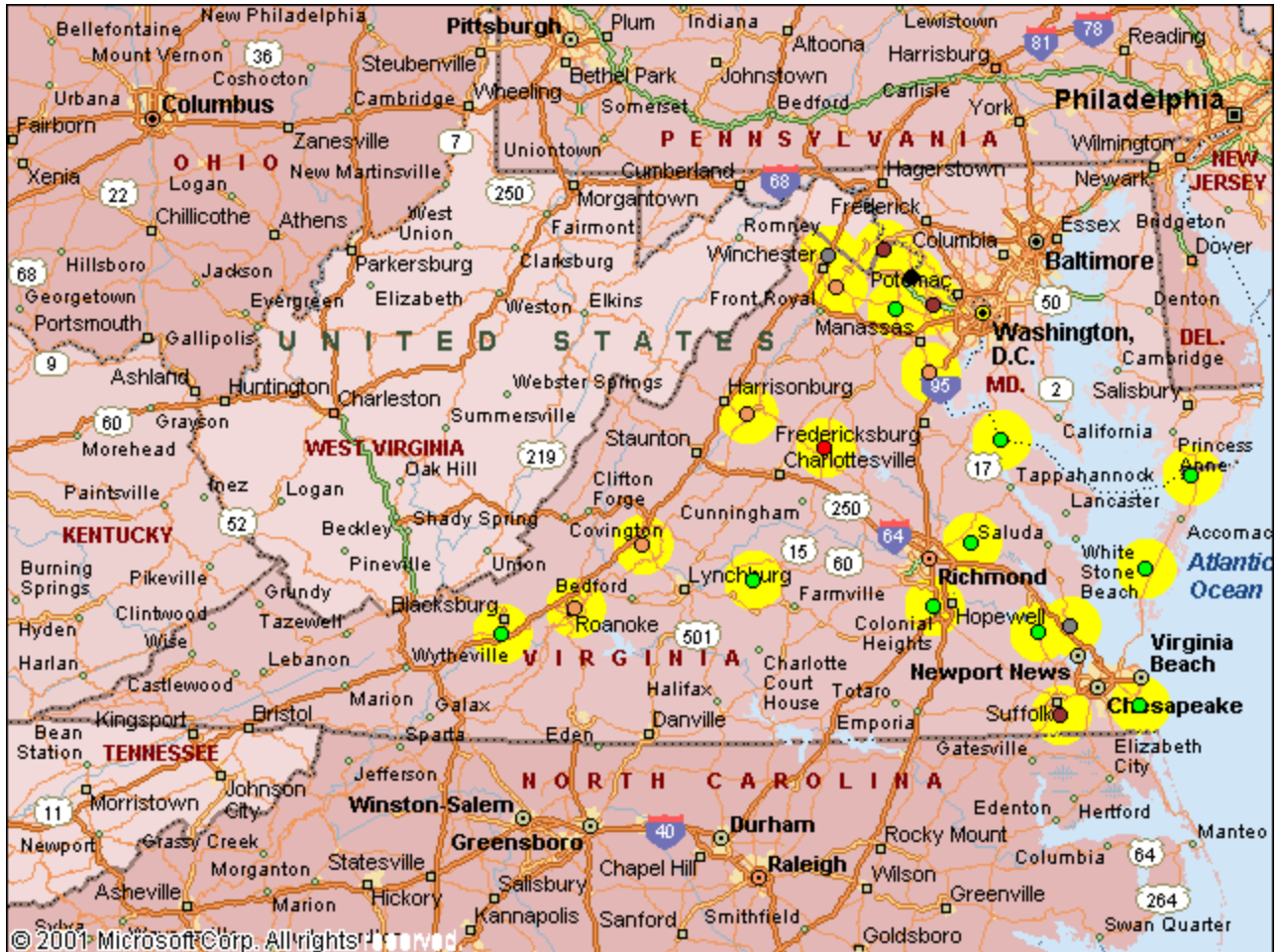
Sunday, November 18, 2007



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



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		