DROUGHT MONITORING TASK FORCE

Drought Status Report

October 22, 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 October 18, 2007 was below normal (81% of normal) and statewide precipitation in each successive shorter time period is increasingly below normal. Statewide precipitation for the last three week period is 6% 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 (73%), New River (81%), Roanoke (82%), Middle James (84%), Northern Virginia (75%), Northern Piedmont (74%), Northern Coastal Plain (75%), York-James (78%) and Southeast Virginia (83%). Appendix A contains precipitation tables for periods going back to October 1, 2006. The long-range monthly climatologic outlook calls for equal chances of below average, average, and above average temperatures and calls for chances of below normal precipitation through November of 2007. The long- range seasonal outlook calls for chances of above average temperatures and equal chances of below average, average and above average precipitation through January 2008 for the majority of the Commonwealth.

The latest NOAA drought monitor indicates the occurrence of drought conditions throughout the Commonwealth and is included as Appendix B. Appendix C contains information from the national drought monitor with only Virginia displayed. Drought conditions have intensified over the entire Commonwealth during the last month due to an extended period of record high temperatures accompanied by almost a total absence of rainfall. Exceptional drought conditions persist in portions of southwest Virginia. The NOAA seasonal drought outlook through January 2008 indicates that it is likely for drought conditions to persist in the entire Commonwealth. The seasonal drought outlook is included as Appendix D.

Seven day average streamflows in the majority of the Commonwealth are in the range of flows indicative of severe hydrologic drought (<5^{th} percentiles) with stream flows in the remainder of the state indicative of moderate hydrologic drought conditions (6^{th} to 9^{th} percentiles). 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. Seven dedicated drought monitoring wells are at levels indicative of moderate hydrologic drought (10^{th} to 24^{th} percentiles), three are at levels indicative of severe hydrologic drought (< 10^{th} percentile) and three are at new period of record low levels. Levels of large reservoirs such as Lake Moomaw, Smith Mountain Lake, Kerr Reservoir, and Philpott Reservoir have declined precipitously due to low inflows.

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 32 systems have initiated voluntary water conservation requirements and 23 systems have initiated mandatory water conservation requirements. Appendix E contains a table of waterworks that have initiated water conservation requirements.

The Virginia Department of Forestry reports that soil and fuel moisture readings are at historically low levels in some parts of the Commonwealth and anticipates an exceptionally severe fall wildfire season (October 15^{th} – November 30^{th}). Between October 1 and October 19^{th} the agency responded to 116 wildfires that burned 970 acres.

The Department of Game and Inland Fisheries reports that the significant deterioration in stream flows across the State have resulted in reduced recreational opportunities. Boating opportunities are very limited on nearly all rivers and streams. The fall trout stocking schedule has been significantly curtailed due to low water conditions in western Virginia. On October 13^{th} the Department issued a ban on all open burning on wildlife management areas.

The increase in intensity of drought impacts is expected to slow with the end of the active growing season. Large areas of the Commonwealth are currently experiencing significant drought impacts due to the recent period of high temperatures and low precipitation. 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 and National Weather Service, the Virginia Department of Agriculture and Consumer Services, the Virginia Department of Environmental Quality, the United States Geological Survey, the Virginia Department of Game and Inland Fisheries, and the Virginia Department of Forestry follow.

Report of the Climatology Office of the University of Virginia with additional information from the National Weather Service

Despite the transition to autumn, with lower sun angles, reduced day length and the growing season drawing to a close, moisture conditions have deteriorated markedly over the past month. Significantly higher than normal temperatures in late September and early October led to daily temperature records at a number of stations and kept evaporation rates high.

Throughout this period, thunderstorm activity across the Commonwealth continued to be limited. Tropical cyclones continued to provide little moisture input - even though four additional storms were named during the last several days of September. Additional storm development in the tropical Atlantic seems unlikely at this time, as hurricane season nears its end.

Without significant widespread rainfall, this month could well be one of the driest months of October (averaged statewide) in the 113-year record. NOAA forecast outlooks for the next two weeks indicate a likelihood of rainfall in the normal range averaged across Virginia, but longer range guidance shows signs of below normal precipitation for late fall and into winter.

Fortunately, we have entered the time of year when our primary source of precipitation shifts from thunderstorms to larger-scale mid-latitude storms and frontal passages. Climatologically, this is expected to bring a number of opportunities for widespread and lingering precipitation events. However, as recent experience (1999-2002 drought) has demonstrated, it is quite possible to have the atmospheric circulation steer moisture-bearing storms away from Virginia.

The importance of precipitation during the colder half of the year cannot be overemphasized. With low evaporation and transpiration rates, these months afford the best opportunity to replenish critical deep soil and ground water reserves. A serious shortfall in moisture this winter could leave many water supply systems and individual well users facing severe problems when the next growing season begins.

The National Weather Service reports that widespread rainfall of an inch or more has not occurred in Virginia since late August. The front that traversed the Commonwealth on October 19th resulted in very little precipitation although some areas of northern Virginia received as much as one half inch. A complex frontal system is forecast to move through the state from October 23rd through 25th with chances of more than one inch of precipitation in western Virginia while areas in eastern Virginia may receive one quarter of an inch or less. While the ninety day seasonal outlook calls for higher than normal temperatures and lower than normal precipitation it should be noted that the accuracy of long range outlooks are questionable. The current seasonal outlook is very similar to the fall outlook for 1995 and is based on a weak/moderate La Nina pattern in the tropical Pacific. The winter of 1995-1996 was marked by periods of colder than normal temperatures and significant storm events, most notably the "Blizzard of 1996". Caution must always be applied to the interpretation of seasonal climatologic outlooks.

Virginia Department of Agriculture and Consumer Services
Status of Agricultural Drought

Overview

According to the USDA crop weather report for the week ending October 14, 2007, the Commonwealth experienced another week without precipitation. Top soil moisture was generally very short. Many livestock producers have sold calves at recent livestock sales in hopes of reducing the need for more hay and easing the stress on pastures. Hay stocks are still in very high demand as winter stocks continue to be fed. Water sources are also a major issue as rivers and creeks remain below normal levels and ground water levels in wells decline. The corn harvest is complete in most areas. Soybean harvest is underway in most areas with full season beans providing better yields than double cropped beans. Peanut and cotton harvest are in full swing and expected to come to an end within the coming week. Farmers have prepared land for small grain plantings but are delaying seeding in hopes of rain to increase soil moisture. During the week ending October 14, 2007, 94% of top soil moisture was rated short to very short.

Due to extremely dry weather conditions, 73 localities have requested the Governor's assistance in obtaining federal disaster designation due to drought. On October 1, the Governor requested that the U.S. Secretary of Agriculture grant a statewide natural disaster designation for Virginia due to drought. In response to the Governor's request, the U.S. Secretary of Agriculture designated 78 additional counties and 34 independent cities in Virginia primary disaster areas due to drought, bringing the total of counties with primary disaster designation to 93 counties. All counties and independent cities in the Commonwealth have been designated primary disaster areas with the exception of the counties of Arlington and York and the independent cities of Alexandria, Bristol, Falls Church, Norton and Poquoson. These

localities have been designated contiguous disaster areas. All Virginia localities have access to federal drought disaster assistance.

Impact on Crops:

Nursery/Horticulture:

- The continuing drought conditions are negatively impacting Virginia's nursery and landscape industries and the Commonwealth's forest and landscape resources. Many plants are beginning to lose their leaves and go dormant as a natural defense against the unusually dry conditions. The Virginia Nursery and Landscape Association reports that nursery growers, retailers, and landscapers are doing all they can to keep their stock alive even though many plants are exhibiting brown, dying leaves. Few buyers are willing to purchase plants at this time with the uncertainty of available water to keep their investments alive. Not only are plants stressed by the lack of water, but the stressed plants are more vulnerable to insect pests and plant diseases. This is true in the nursery, in the landscape, and in the forest. Highly stressed plants will suffer for many months, if not years, before they may be able to recover from the current drought damage. Unfortunately, many never will recover. Hopefully, the future purchase of replacement plants and trees will allow Virginia's nursery and landscape industries to recover from the economic impact of this year's dry season.

Hay Crop:

- Pastures are brown, non-productive and overgrazed. Many areas of the state are desperately in need of hay. Producers are writing to VDACS, their legislators, and the Governor to request assistance in acquiring hay for their animals.

Peanuts and Cotton:

- Peanut and cotton harvesting is underway and crop insurance adjusters are busy visiting many growers in Southeast Virginia. The best peanuts are yielding approximately 2,400 pounds per acre and the worst are yielding 100 pounds per acre. Many growers are being told by crop insurance adjusters to dig and bale the peanut vines. Since cotton plants tolerate drought conditions better than most crops grown in the state, the yields are not as severely impacted. Most cotton growers have been fortunate to pick at least a bale per acre or 480 pounds.

Impact on Dairy:

- Drought conditions had been spotty prior to September 1, especially in the central and northern Shenandoah Valley where more than 60% of the dairy farms are located. Many farmers had corn crops that were near normal in many areas. However, since September 1, all of the western part of the state has been impacted by the drought.

- Hay for feeding dairy cattle is scarce. There have been reports of round bales of hay that sold for $20.00 per bale last year that are now being sold for as much as $75. The cost of feed for most dairymen will significantly increase.

- Dairymen who have their operations structured to utilize "grazing of pastures" for the majority of their roughage are especially impacted because there is no grass available on most pastures. These producers typically buy feed for the winter months. A growing number of dairymen have restructured their operations with an emphasis on grazing in recent years in an attempt to reduce the feed costs and increase profits.

- There have been no reports of dairymen planning to sell out because of the drought. Most are trying to hang on and stay in business. Fortunately, milk prices are at an all time high which will help producers with the purchase of the high priced feed. However, even with better milk prices, the impact of the drought will be severe to most dairymen.

Impact on Livestock:

- Some feeder and stocker cattle have been sold earlier than normal and more culling is occurring. Many producers are feeding more hay than usual which increases production costs. Some beef farmers are feeding hay as if it were the middle of winter. In some areas hay supplies are dangerously low, especially for small farmers who normally wait until they need hay to make small purchases. Many pastures are more overgrazed than normal which will result in diminished productivity when rains return and may cause an increase in the need for expensive pasture renovations. Renovations also can keep pasture out of use for months. 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 due to stress may result in losses in future calf and lamb crops.

Impact on Water Supplies:

- Ground water levels in shallow wells are extremely low and some wells have gone dry. Reduced stream flows and water levels in farm ponds have placed greater demands on farm wells that supply drinking water to livestock.

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 were scheduled to expire October 1, 2007. However, at the request of VDACS the waivers were extended until December 1, 2007, due to the continuing drought conditions.

Virginia Department of Environmental Quality
Condition of Major Reservoirs

The drought is beginning to cause major concern in the management of our large reservoirs. Fortunately, the majority of declines occurred late in the summer and early fall so recreation was not severely impacted. Focus is shifting toward making sure the large reservoirs return to their normal levels by the spring of 2008.

The elevation of Kerr Reservoir is at 293 feet msl, 5.5 feet below the guide curve. The project has fallen 1.5 feet in the past month. The Southeastern Power Administration continues to purchase power on the open market to make up for lost hydroelectric power production at Kerr Dam. This allows the Corps to release the minimum amount of water necessary to protect water quality and fisheries in the lower Roanoke River and to keep the salt wedge from migrating up the river and shutting down a major North Carolina paper mill. The release is approximately 2000 cfs and is reviewed on a weekly basis to make sure all of the environmental objectives are being met. Because inflow to the project is only about 1000 cfs, Kerr Lake continues to fall. The Corps projects that the lake will fall an additional two feet to 291 feet this winter. That assumption is based on monthly inflows returning to 35% of normal.

Lake Moomaw is currently at 1560 feet msl, 22 feet below full and has had 80% of its conservation pool depleted. Inflow is 40 cfs and outflow is 180 cfs. The lake is losing about 4 per cent of its conservation storage per week. The level is not as low as it was in 1999 when the conservation pool was completely depleted in the late fall. DEQ is in contact with the Corps of Engineers Norfolk District and will likely request reductions in the minimum release prior to the next report.

Smith Mountain Lake is at 791.3 feet msl, 2.7 feet below full. The lake has fallen 1.1 feet in the last month. The project is operating under variance and is currently releasing 400 cfs instead of the normal 650 cfs release. This conserves about 0.9 feet of water for each month that the variance is in effect. DEQ continues to conference with American Electric Power, lake stakeholders, downstream river stakeholders and various state agencies on a regular basis to monitor the need to continue or modify this variance.

The system of reservoirs owned by Rivanna Water and Sewer Authority is currently 80% full. This system which had difficulty meeting demands in the 2002 drought remains in a drought warning phase which is the second stage of a three stage conservation program. The system's reservoirs have lost almost 10 % of their storage in the last month.

Lake Anna is at 247.3 feet msl and is releasing 20 cfs into the North Anna River, half of the normal minimum release. The lake has adequate cooling water for power production for the foreseeable future.

United State Geological Survey
Streamflow and Ground Water Levels

With the continued summer-like heat and almost total lack of precipitation for the last month, streamflows have declined across the State to the extreme and severe levels that mimic other drought indicators. Last month the lowest flow statistics were in the Blue Ridge and slightly to the east, portions of the Valley and Ridge, and a few areas in the eastern portions of the State. Areas in the upper James, Shenandoah, Big Sandy, and western portion of the Tennessee had streamflows in the normal range of flow for this time of year. Currently, flow statistics at most of the streamflow gages in

the State are less than the 10th percentile, well below normal. Most of the gages that were previously in the normal range of flow are now below normal (less than the 25th percentile). Several gages with 50-70 years of record are setting record lows for September and October. Streamflow conditions based on daily values for October 19th are presented in Appendix F. Area summaries of 7-day average streamflows from the USGS drought watch web page show similar flow conditions. However, the 'Moderate hydrologic drought' and 'Below normal' areas in the James River Basin may be partially based on artificially high flows in the James River caused by Lake Moomaw releases. Actual drought conditions may be slightly worse than depicted in Appendix G.

Groundwater conditions appear to be mixed as shown by the Virginia Climate Response Network with a few wells showing little or no response to the drought. This may be the result of a limited ground-water network and data problems associated with a few wells. In general, it appears that ground-water levels in the eastern portion of the State are higher than levels in the rest of the State. USGS staff has partially completed a set of ground water-level and spring discharge measurements associated with a local study in Clarke County. About half of the wells measured have water levels lower than those measured in Oct 2002. Many of the spring discharges are the lowest measured and some are completely dry. Ground water levels based on conditions on October 19th are presented in Appendix H.

Virginia Department of Game and Inland Fisheries

With the significant deterioration in stream flow and ground water conditions across the State there are numerous areas that are experiencing reduced recreation. Boating opportunities are very limited on nearly all of the rivers and streams. The Department's ramps at most major reservoirs remain open with the exception of Lake Chesdin, however boaters are cautioned to be watchful of unmarked navigation hazards that develop in reservoirs as levels drop. Boaters should visit the Department's web-site for information on access and conditions at public boat ramps.

Normally the Department's trout hatcheries would be stocking streams in the western part of the state almost daily during the fall months, however low flows and increased temperatures have delayed the October stockings on many waters. Modifications to the fall trout stocking schedules will be necessary in order to make space in the hatcheries and provide the best possible recreational opportunities under current conditions. The trout hatcheries are currently holding trout for 2007, 2008 and 2009 stockings and as these fish grow some must be stocked out in order to provide room for growth.

Usage of many forested areas is expected to increase as fall foliage begins to turn and hunting seasons begin. Some hunting seasons including the archery season for deer and the dove season are already underway, with the major firearms seasons for both small and big-game beginning in November. The Department issued a burning ban on all Wildlife Management Areas effective on October 13th. As the state's largest non-federal landowner the Department issued a joint news release with the Department of Forestry on October 19th warning all outdoor enthusiasts of the high fire risk, fire safety tips and the Governor's statewide ban on open air burning.

Hemorrhagic disease, a viral infection that impacts deer, has been found in 49 counties in Virginia causing 664 cases of confirmed deer mortality. The virus is carried by biting midges that develop high populations under drought conditions due to utilizing exposed mud flats for reproduction.

Department of Forestry

A statewide burning ban was implemented on October 19, 2007 in an effort to eliminate outdoor burning fire escapes – which are Virginia's leading cause of wild land fire. The generally light to moderate rainfall on October 19 did little to reduce the long term drought and serious potential for a severe fall wildfire season. Several successive rain events are needed to significantly reduce the potential for wildfires. Since October 1, the DOF has responded to 116 fires which have burned 970 acres. Virginia's official fall fire season is from October 15th through November 30th. Historically, wildfire occurrence increases dramatically around Halloween and typically peaks during the second week of November. Drought indicators categorize nearly the entire Commonwealth in severe to extreme drought conditions with a low probability of recovery during the fall fire season. An extended period of significant precipitation, such as a stationary depression from a gulf hurricane or tropical storm, is needed to reduce the fire potential and increase fuel moistures. Present forecast models and outlooks are not favorable for significant recovery.

In comparison to the 1999 and 2001 fall fire seasons, both very active seasons that taxed the fire suppression resources, conditions at this time are significantly worse with drought indices at extreme levels, large diameter fuel moistures at record lows and live fuel moistures well below normal. The prevailing conditions favor the development of wildfires that will be more difficult to contain and control, require greater numbers of resources for much longer time periods and will tax existing response personnel with the additional time necessary for extensive mop-up, rehabilitation and patrol.

Additionally, this is a problem that is statewide in scope limiting the ability of the DOF to concentrate equipment and personnel in the most severe areas.

APPENDIX A

Precipitation departures by Drought Evaluation Region.

PRELIMINARY PRECIPITATION SUMMARY

Prepared: 10/19/07

	DROUGHT REGION	OBSERVED	Oct 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	0.24	1.67	-1.43	14%
2	New River	0.08	1.84	-1.76	4%
3	Roanoke	0.07	2.16	-2.08	3%
4	Upper James	0.00	1.89	-1.89	0%
5	Middle James	0.03	2.23	-2.20	1%
6	Shenandoah	0.05	1.85	-1.80	3%
7	Northern Virginia	0.03	2.02	-1.99	1%
8	Northern Piedmont	0.15	2.32	-2.17	6%
9	Chowan	0.31	2.08	-1.76	15%
10	Northern Coastal Plain	0.12	2.04	-1.92	6%
11	York-James	0.37	2.05	-1.68	18%
12	Southeast Virginia	0.24	2.13	-1.89	11%
13	Eastern Shore	0.10	1.87	-1.76	6%
	Statewide	0.12	2.03	-1.91	6%

	DROUGHT REGION	OBSERVED	Sep 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	1.07	5.13	-4.06	21%
2	New River	1.55	5.25	-3.70	30%
3	Roanoke	2.03	6.39	-4.36	32%
4	Upper James	1.91	5.39	-3.47	36%
5	Middle James	0.79	6.36	-5.57	12%
6	Shenandoah	1.53	5.52	-4.00	28%
7	Northern Virginia	0.81	6.09	-5.29	13%
8	Northern Piedmont	0.74	6.60	-5.86	11%
9	Chowan	0.92	6.51	-5.59	14%
10	Northern Coastal Plain	1.24	6.12	-4.88	20%
11	York-James	1.90	6.95	-5.05	27%
12	Southeast Virginia	0.65	6.56	-5.91	10%
13	Eastern Shore	1.52	5.47	-3.96	28%
	Statewide	1.28	6.03	-4.75	21%

	DROUGHT REGION	OBSERVED	Aug 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	2.26	8.96	-6.70	25%
2	New River	2.75	8.56	-5.81	32%
3	Roanoke	2.86	10.10	-7.25	28%
4	Upper James	3.36	8.72	-5.36	39%
5	Middle James	3.51	10.18	-6.67	35%
6	Shenandoah	4.30	8.86	-4.56	49%
7	Northern Virginia	2.67	9.94	-7.27	27%
8	Northern Piedmont	3.12	10.41	-7.29	30%
9	Chowan	2.93	10.82	-7.89	27%
10	Northern Coastal Plain	2.68	9.98	-7.30	27%
11	York-James	4.23	11.81	-7.59	36%
12	Southeast Virginia	4.13	11.68	-7.55	35%
13	Eastern Shore	4.01	9.35	-5.33	43%
	Statewide	3.15	9.86	-6.71	32%

	DROUGHT REGION	OBSERVED	Jul 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	8.24	13.43	-5.20	61%
2	New River	7.39	12.35	-4.96	60%
3	Roanoke	8.29	14.50	-6.21	57%
4	Upper James	7.95	12.76	-4.81	62%
5	Middle James	6.71	14.59	-7.89	46%
6	Shenandoah	8.29	12.61	-4.32	66%
7	Northern Virginia	6.33	13.70	-7.38	46%
8	Northern Piedmont	5.79	14.81	-9.02	39%
9	Chowan	7.26	15.33	-8.07	47%
10	Northern Coastal Plain	5.46	14.43	-8.97	38%
11	York-James	9.94	16.91	-6.97	59%
12	Southeast Virginia	8.41	16.74	-8.34	50%
13	Eastern Shore	7.76	13.35	-5.58	58%
	Statewide	7.42	14.20	-6.78	52%

	DROUGHT REGION	OBSERVED	Jun 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	10.98	17.57	-6.59	63%
2	New River	10.42	16.20	-5.78	64%
3	Roanoke	11.21	18.39	-7.18	61%
4	Upper James	11.70	16.47	-4.76	71%
5	Middle James	10.07	18.10	-8.04	56%
6	Shenandoah	11.56	16.32	-4.76	71%
7	Northern Virginia	8.27	17.57	-9.30	47%
8	Northern Piedmont	7.94	18.82	-10.88	42%
9	Chowan	9.48	18.98	-9.51	50%
10	Northern Coastal Plain	7.32	17.99	-10.67	41%
11	York-James	12.13	20.32	-8.20	60%
12	Southeast Virginia	11.63	20.35	-8.73	57%
13	Eastern Shore	13.02	16.32	-3.31	80%
	Statewide	10.28	17.99	-7.71	57%

	DROUGHT REGION	OBSERVED	May 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	12.73	22.40	-9.67	57%
2	New River	12.20	20.41	-8.21	60%
3	Roanoke	13.18	22.72	-9.54	58%
4	Upper James	13.73	20.75	-7.02	66%
5	Middle James	12.53	22.34	-9.81	56%
6	Shenandoah	13.75	20.16	-6.41	68%
7	Northern Virginia	9.53	21.91	-12.38	44%
8	Northern Piedmont	10.03	23.04	-13.01	44%
9	Chowan	12.36	23.07	-10.71	54%
10	Northern Coastal Plain	8.56	22.15	-13.59	39%
11	York-James	13.68	24.59	-10.91	56%
12	Southeast Virginia	13.59	24.22	-10.62	56%
13	Eastern Shore	14.76	19.84	-5.08	74%
	Statewide	12.31	22.25	-9.94	55%

	DROUGHT REGION	OBSERVED	Apr 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	17.20	26.15	-8.96	66%
2	New River	15.32	23.96	-8.64	64%
3	Roanoke	16.39	26.52	-10.13	62%
4	Upper James	17.23	24.15	-6.92	71%
5	Middle James	15.76	25.69	-9.93	61%
6	Shenandoah	17.33	23.08	-5.76	75%
7	Northern Virginia	13.26	25.21	-11.95	53%
8	Northern Piedmont	13.12	26.32	-13.20	50%
9	Chowan	16.80	26.50	-9.70	63%
10	Northern Coastal Plain	12.27	25.24	-12.97	49%
11	York-James	17.72	27.89	-10.17	64%
12	Southeast Virginia	18.11	27.46	-9.35	66%
13	Eastern Shore	19.31	22.76	-3.45	85%
	Statewide	15.95	25.67	-9.72	62%

	DROUGHT REGION	OBSERVED	Mar 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	20.33	30.40	-10.07	67%
2	New River	19.36	27.63	-8.27	70%
3	Roanoke	20.08	30.79	-10.71	65%
4	Upper James	20.86	27.94	-7.07	75%
5	Middle James	18.81	29.74	-10.93	63%
6	Shenandoah	20.21	26.28	-6.07	77%
7	Northern Virginia	16.41	28.86	-12.45	57%
8	Northern Piedmont	15.55	30.13	-14.58	52%
9	Chowan	19.37	30.87	-11.50	63%
10	Northern Coastal Plain	15.08	29.52	-14.44	51%
11	York-James	19.44	32.57	-13.13	60%
12	Southeast Virginia	20.05	31.66	-11.61	63%
13	Eastern Shore	21.09	27.07	-5.98	78%
	Statewide	19.02	29.71	-10.69	64%

	DROUGHT REGION	OBSERVED	Feb 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	21.73	33.98	-12.25	64%
2	New River	21.01	30.57	-9.55	69%
3	Roanoke	22.13	34.10	-11.96	65%
4	Upper James	23.32	30.79	-7.47	76%
5	Middle James	20.78	32.87	-12.08	63%
6	Shenandoah	22.26	28.69	-6.43	78%
7	Northern Virginia	19.25	31.53	-12.28	61%
8	Northern Piedmont	18.00	33.10	-15.10	54%
9	Chowan	21.53	34.03	-12.50	63%
10	Northern Coastal Plain	17.59	32.66	-15.07	54%
11	York-James	21.19	36.10	-14.91	59%
12	Southeast Virginia	22.32	35.17	-12.85	63%
13	Eastern Shore	23.87	30.26	-6.39	79%
	Statewide	21.11	32.84	-11.73	64%

	DROUGHT REGION	OBSERVED	Jan 1, 2007 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	24.91	37.71	-12.80	66%
2	New River	23.97	33.78	-9.80	71%
3	Roanoke	26.01	38.01	-12.00	68%
4	Upper James	26.32	34.06	-7.74	77%
5	Middle James	24.36	36.53	-12.17	67%
6	Shenandoah	23.82	31.54	-7.72	76%
7	Northern Virginia	21.50	34.81	-13.31	62%
8	Northern Piedmont	20.51	36.62	-16.11	56%
9	Chowan	24.06	38.14	-14.09	63%
10	Northern Coastal Plain	21.83	36.41	-14.59	60%
11	York-James	23.80	40.23	-16.44	59%
12	Southeast Virginia	25.49	39.33	-13.84	65%
13	Eastern Shore	26.04	33.82	-7.78	77%
	Statewide	24.17	36.48	-12.31	66%

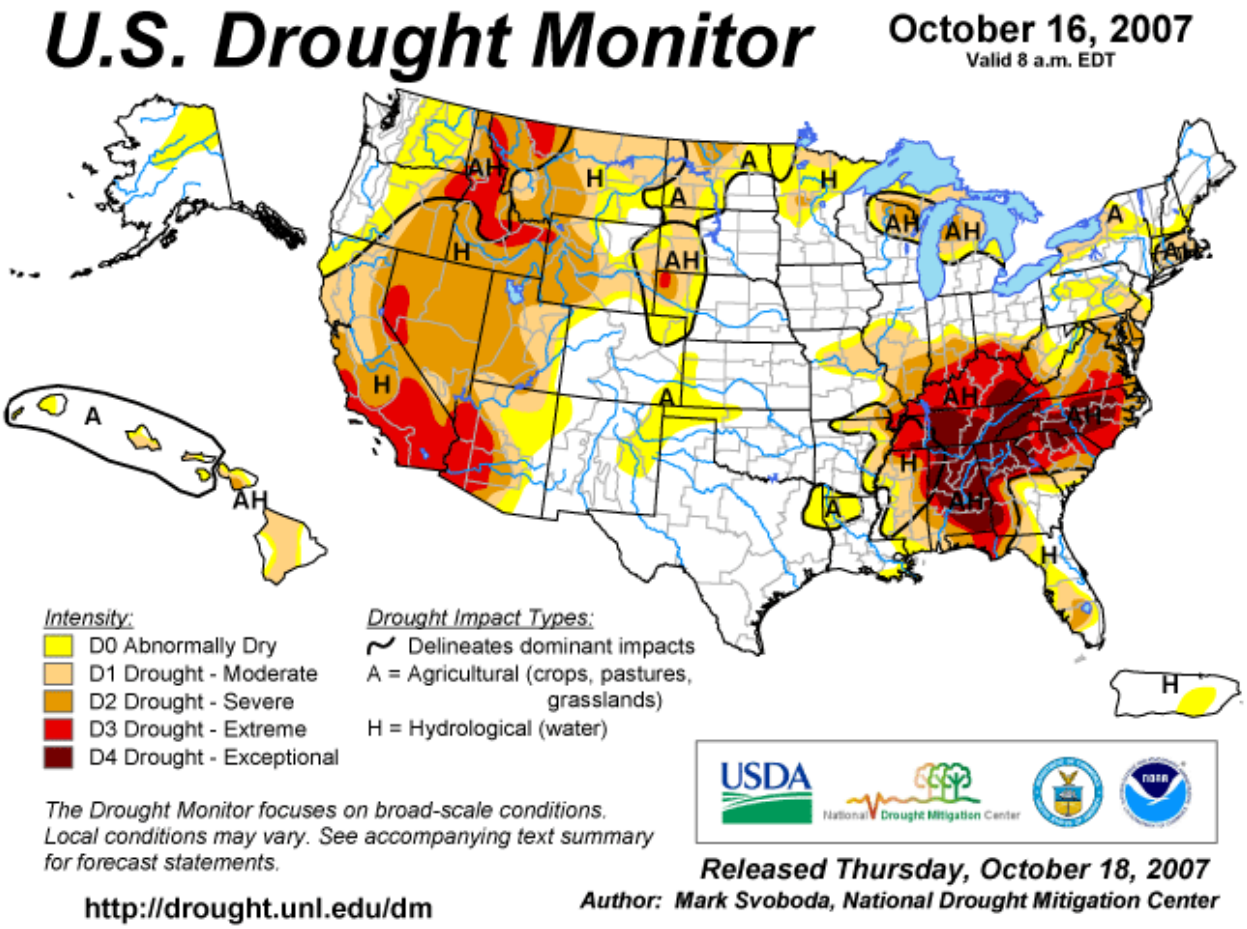
	DROUGHT REGION	OBSERVED	Dec 1, 2006 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	26.91	41.36	-14.45	65%
2	New River	25.76	36.48	-10.73	71%
3	Roanoke	28.19	41.27	-13.08	68%
4	Upper James	28.32	37.01	-8.69	77%
5	Middle James	25.94	39.70	-13.76	65%
6	Shenandoah	24.94	34.13	-9.19	73%
7	Northern Virginia	23.16	37.90	-14.74	61%
8	Northern Piedmont	22.27	39.90	-17.63	56%
9	Chowan	26.22	41.17	-14.94	64%
10	Northern Coastal Plain	23.53	39.69	-16.16	59%
11	York-James	25.62	43.62	-18.00	59%
12	Southeast Virginia	27.94	42.50	-14.57	66%
13	Eastern Shore	28.79	37.06	-8.27	78%
	Statewide	26.02	39.60	-13.58	66%

	DROUGHT REGION	OBSERVED	Nov 1, 2006 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	29.66	44.64	-14.98	66%
2	New River	29.71	39.52	-9.81	75%
3	Roanoke	33.58	44.63	-11.04	75%
4	Upper James	32.10	40.37	-8.27	80%
5	Middle James	31.68	43.21	-11.54	73%
6	Shenandoah	29.09	37.18	-8.09	78%
7	Northern Virginia	28.96	41.31	-12.36	70%
8	Northern Piedmont	28.57	43.69	-15.12	65%
9	Chowan	33.60	44.28	-10.68	76%
10	Northern Coastal Plain	28.83	42.83	-14.00	67%
11	York-James	31.28	46.99	-15.71	67%
12	Southeast Virginia	35.55	45.57	-10.02	78%
13	Eastern Shore	33.67	40.01	-6.34	84%
	Statewide	31.18	42.83	-11.65	73%

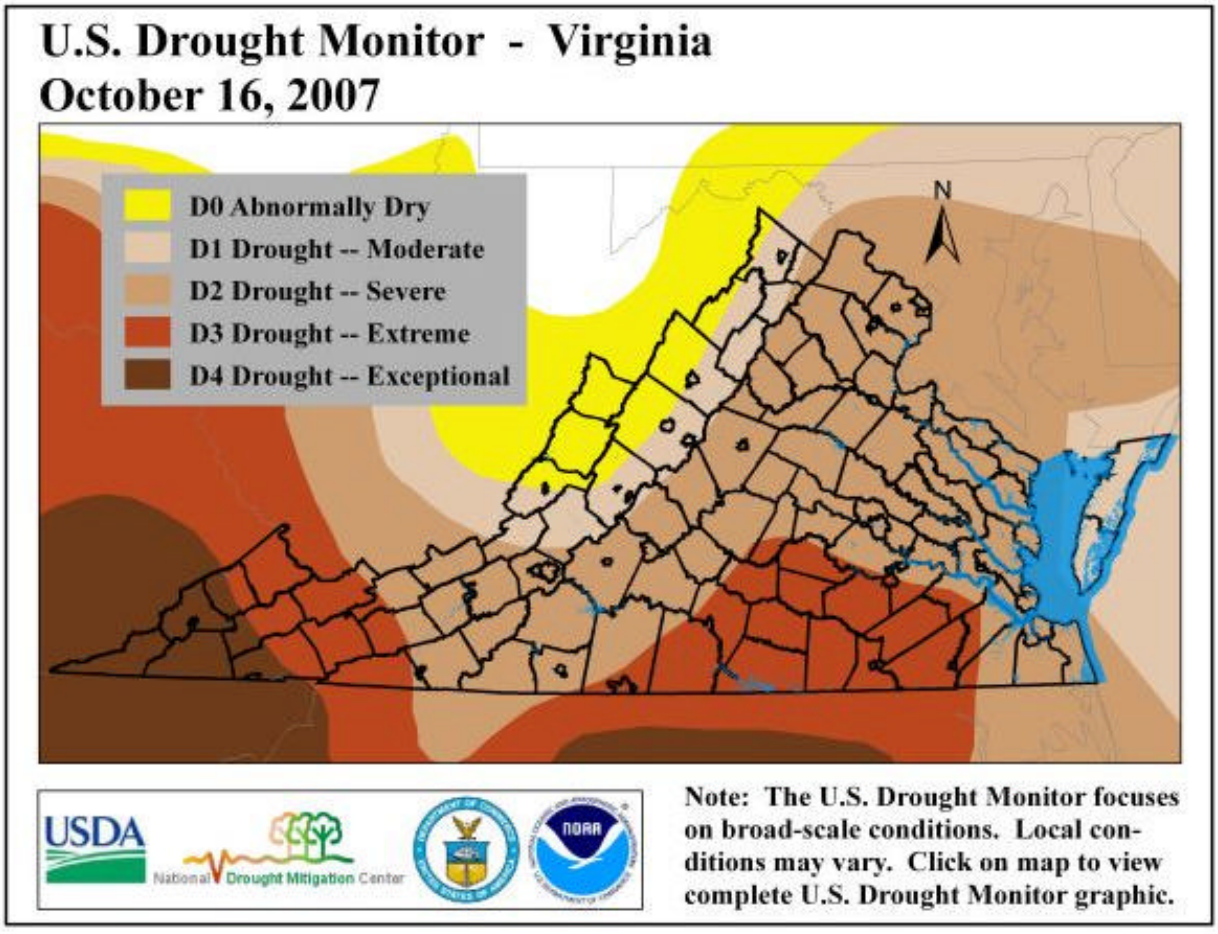
	DROUGHT REGION	OBSERVED	Oct 1, 2006 NORMAL	- Oct 18, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	34.64	47.52	-12.89	73%
2	New River	34.69	42.68	-7.99	81%
3	Roanoke	39.62	48.34	-8.72	82%
4	Upper James	39.03	43.62	-4.59	89%
5	Middle James	39.37	47.05	-7.68	84%
6	Shenandoah	34.34	40.37	-6.03	85%
7	Northern Virginia	33.74	44.79	-11.05	75%
8	Northern Piedmont	35.10	47.69	-12.59	74%
9	Chowan	41.30	47.86	-6.56	86%
10	Northern Coastal Plain	34.91	46.33	-11.43	75%
11	York-James	39.28	50.52	-11.24	78%
12	Southeast Virginia	40.62	49.23	-8.61	83%
13	Eastern Shore	40.60	43.22	-2.62	94%
	Statewide	37.42	46.33	-8.91	81%

	DROUGHT REGION	OBSERVED	Water Year Oct 1, 2006 NORMAL	- Sep 30, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	33.32	45.85	-12.53	73%
2	New River	33.07	40.85	-7.78	81%
3	Roanoke	37.52	46.19	-8.66	81%
4	Upper James	37.11	41.73	-4.62	89%
5	Middle James	38.55	44.82	-6.28	86%
6	Shenandoah	32.76	38.52	-5.76	85%
7	Northern Virginia	32.91	42.77	-9.87	77%
8	Northern Piedmont	34.21	45.37	-11.16	75%
9	Chowan	40.06	45.78	-5.72	88%
10	Northern Coastal Plain	33.55	44.30	-10.74	76%
11	York-James	37.01	48.47	-11.46	76%
12	Southeast Virginia	39.73	47.11	-7.38	84%
13	Eastern Shore	38.99	41.35	-2.37	94%
	Statewide	36.02	44.30	-8.28	81%

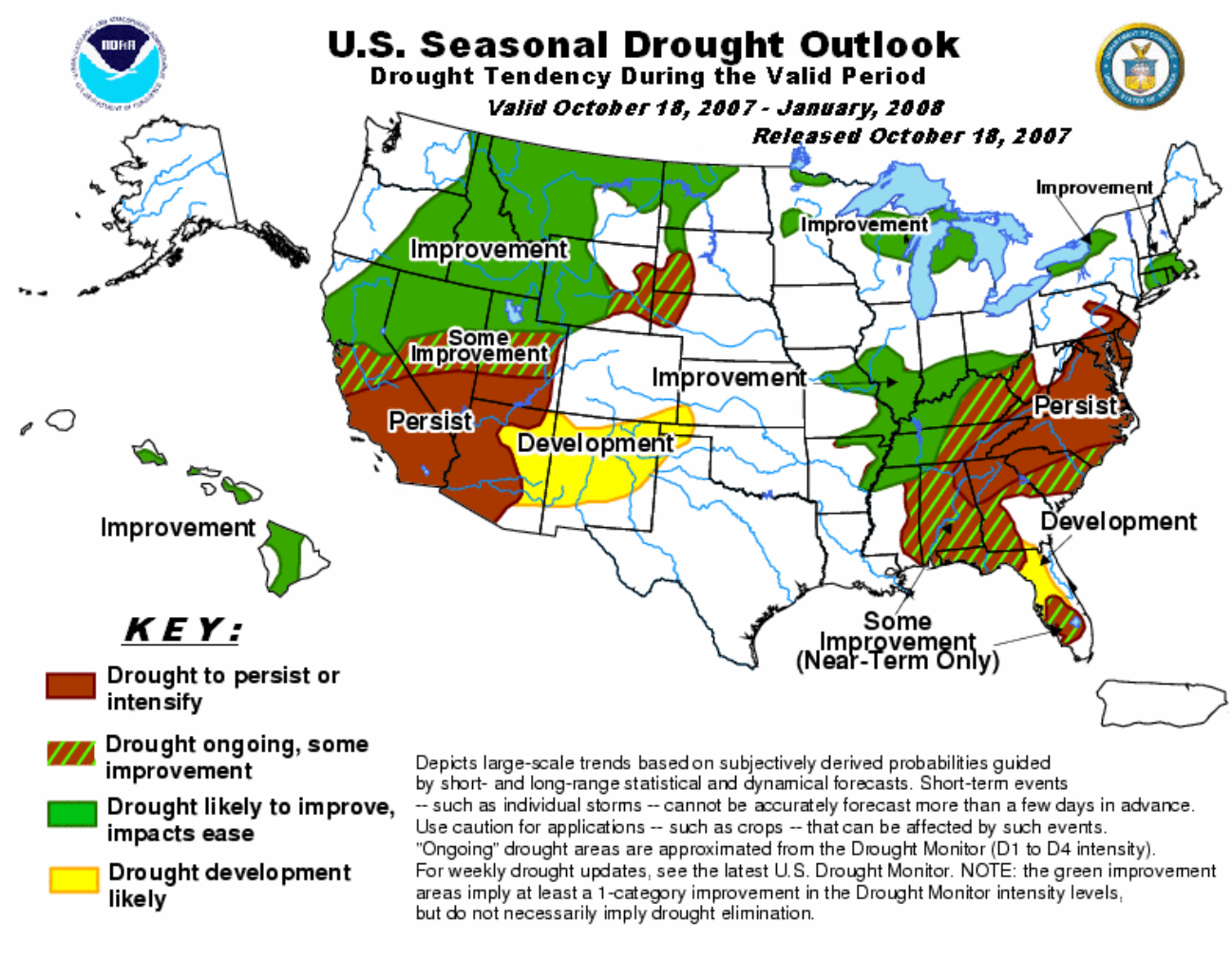
APPENDIX B


U.S. Drought Monitor
October 16, 2007
Valid 8 a.m. EDT
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
USDA
National Drought Mitigation Center
Released Thursday, October 18, 2007
Author: Mark Svoboda, National Drought Mitigation Center

APPENDIX C


U.S. Drought Monitor - Virginia
October 16, 2007
D0 Abnormally Dry
D1 Drought -- Moderate
D2 Drought -- Severe
D3 Drought -- Extreme
D4 Drought -- Exceptional
N
USDA
National Drought Mitigation Center
NOAA
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


U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid October 18, 2007 - January, 2008
Released October 18, 2007
Improvement
Improvement
Improvement
Some Improvement
Improvement
Persist
Development
Persist
Development
Improvement
Some Improvement (Near-Term Only)
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 of Report: **10/18/07**

N-None
M-Mandatory
V-Voluntary

B-Better
S-Stable/Same
W-Worse

PWSID	Waterworks	Source Name	Restrictions	Situation (population)
1071455	Giles County PSA	well	N	**W** 10/18/07: Well water level at 65 ft above pump at startup, 3 ft lower than 10/05/07. Drops slightly during pumping. 10/05/07: started using secondary wells, Orchard & Tannery, to supplement. Still in good shape.
1077240	Town of Fries	Eagle Bottom Creek & New River	N	**S** 10/16/07: the Creek impoundment was still overflowing, though slightly. They exercised their auxiliary New River withdrawal portable pump on 8/16/07; it is ready to use if needed.
1105200	Town of Jonesville	Wynn Spring #1 and Slemp Spring	N	**W** 10/16/07: Springs' flowrate is decreasing. Normal wtp operating rate = 380 gpm; down to 315 gpm and increased operating hours 17.5 hrs/day. Still some overflow from Slemp spring that can be captured by using both raw water pumps at the spring.
1105400	Lee County PSA	Blue Springs	N	**S** 10/15/07: Spring flow has fallen below the established safe yield. WOP Safe yield=1,552,000 gpd; current spring yield = 230,000 gpd. Raw water captured = 195,900 gpd. At this rate, tank levels are staying at about 2/3 full.
1105400	Lee County PSA	KVS Quarry	N	**S** 10/15/07: Water level in quarry is dropping about 1/2 inch per day; currently at 179.5 inches below catwalk. With 6 foot extension placed below the raw water pumps, estimate 127 days until water level reaches the bottom of the new intake. This estimate is made with limited information and will probably change as we get more and better numbers on how fast the level is dropping.
1155635	Town of Pulaski	Two impoundments and Peak Creek	N	**W** 10/18/07: Gatewood down 13.5 ft. Hogans down 16.5 ft. Working on drought response plan with NRV PDC/Kevin Byrd. This plan identified 20 ft down as the critical point for reservoir level.
1167050	Russell County Water & Sewerage Authority	springs, wells, Clinch River	N	**W** 10/17/2007: 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.

11697 25	Town of Nickelsville	Wells	V	**B** 10/17/07: 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; needs to be grouted and 48-hr Y & D done. Repairing leaks (accountability is satisfactory).
11850 61	Town of Bluefield	impoundment of Bluestone River	N	**S** 10/17/2007: USGS gauge for the Bluestone River at Falls Mills (several miles below WTP intake) has been in service since 10/01/1980. The daily flows registered in September 2007are the historic lows for most days. Current flow of 10 cfs > 7.9 cfs experienced in September. The pond impounded by the check dam at the WTP is at a low level, exposing areas on the pond periphery. The WTP is currently able to withdraw at its design capacity of 1.5 MGD.
11856 25	Town of Pocahontas	Abbs Valley Creek	V	**W** 10/17/2007: Flow in source water, Abbs Valley Creek is no longer overflowing the check dam. When the WTP operates, it lowers the elevation of water in the pond. Operators currently able to meet demand by operating WTP and drawing pond down, stopping WTP to allow pond to refill, and restarting WTP. WTP operates 12 hours/day on average. However, it can be supplied by Greater Tazewell WTP if there is a need to reduce demand at Pocahonatas. Likewise the Greater Tazewell WTP could supplement supply to Pocahontas through an existing interconnection via the TCPSA Boissevain storage tank, which is 72 feet higher in elevation than the Pocahontas tanks. Town issued call for voluntary conservation on September 28, 2007.
11857 62	Greater Tazewell	Lake Witten, Clinch River, & impoundment of Cox Brance	N	**S** 10/17/2007: Flow in all three raw water sources appears to be remaining steady. The smallest source, Cox Branch is lowest, with water now longer overflowing the dam. WTP drawing from storage in Lake Witten, which is down several feet. No current problems in meeting demand.
11950 50	Town of Appalachia	reservoir	V	**W** 10/16/07: down 12'-3" from overflow. 41 MG left, 80-85 days. Voluntary conservation instituted week of 9/24/07.
11951 00	Town of Big Stone Gap	Big Cherry Reservoir	N	**W** 10/16/07: down 12 ft from overflow; not enough data on new dam to determine if this is abnormal. 233 MG left, 116 days.
11959 50	Town of Wise	reservoir	N	**W** 10/16/07: down 7'- 8.5", 135 MG left, 225 days left (@ 0.6 MGD). Average level for this time of year. Have not used auxiliary well yet; its pump is being repaired.
17200 76	City of Norton	reservoirs	N	**W** 10/17/07: Upper reservoir down 22 ft; lower reservoir down 10 ft from overflow. 53.1 MG or 80 days left. Worse than normal for this time of year.
20032 50	Albemarle County / Crozet	Beaver Creek Reservoir	M	**S -** Beaver Creek Reservoir is currently down 2.4 feet from normal full. Drought warning and mandatory restrictions in effect August 15
20036 00	Charlottesville/ Albemarle County	Sugar Hollow and Ragged Mountain Reservoirs (Observatory WTP)	M	**S** - The Sugar Hollow reservoir is down 13.4 feet from full. Ragged Mountain reservoir is 2.0 feet below full. Drought warning and mandatory restrictions in effect August 15.
20036 75	Albemarle County / Scottsville	Totier Creek Reservoir	M	**S -** The Totier Creek reservoir is full. Drought warning and mandatory restrictions in effect August 15
20037 25	Charlottesville/ Albemarle County	South Fork Rivanna (South Rivanna WTP)	M	**S -** The South Fork Rivanna reservoir is down 1.1 feet from full. Drought warning and mandatory restrictions in effect August 15
20652 50	Fluvanna Correctional Center for Women	Mechunk Creek and on-site Raw Water Reservoir	V	**W -** Reservoir is at ~65% of full capacity (~26 MG remain). No withdrawal from Mechunk Creek currently due to low levels. Moderate Drought Condition has been declared. Non-essential water use has been reduced.

2069250	Frederick County Sanitation Authority	Stephens City and Clearbrook Quarries; City of Winchester	V	**First Report -** Voluntary conservation has been requested.
2123325	NCSA - Lovingston	Black Creek Reservoir and Wells	M	**S -** Mandatory restrictions in effect October 8
2125065	NCSA - Gladstone	Spring	M	**S -** Mandatory restrictions in effect October 8
2125650	NCSA - Schuyler	Johnson's Branch	M	**W -** Mandatory restrictions in effect October 8
2125910	NCSA - Wintergreen	Lake Monacan	M	**W -** Lake Monacan is currently at 36.5 million gallons or 38% of full capacity. Mandatory restrictions in effect October 8.
2171750	Town of Strasburg	North Fork Shenandoah River	V	**S -** Voluntary conservation has been requested. Stream flow approximately 84 cfs on 16 October.
2187406	Front Royal	South Fork, Shenandoah River	N	**B -** Mean stream flow reported at 28.2% on 16 October . 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.
2840500	Winchester, City of	North Fork Shenandoah River	V	**First Report -** Voluntary conservation requested on 1 October. Stream flow 99 cfs on 16 October.
3053280	DCWA Central (Dinwiddie County)	Appomattox River Water Authority (ARWA)	M	
3081550	GCWSA - Jarratt	Nottoway River	N	S - Waterworks has increased work hours per day to decrease withdrawal rate.
3093120	Isle of Wight County	Suffolk	V	S - follows Suffolk's lead on conservation. Called for voluntary conservation by press release on 10/10.
3095490	JCSA Central	wells	V	S - this is the "annual" restriction of use, due to distribution system delivery problems (not due to source issues)
3149700	Puddledock Road (Prince George County)	ARWA	M	
3550050	Chesapeake - Western Branch system	City of Portsmouth	V	This portion of the city is consecutive to (receives water from) the city of Portsmouth. Because Portsmouth decided to go on voluntary restrictions, Chesapeake has decided to follow Portsmouth's lead.
3550051	Chesapeake	Northwest River, City of Norfolk Raw Water	V	S-10/17 Will follow Portsmouth and Norfolk's lead on conservation. Next Tuesday will entertain ordinance with Council for restrictions. Chlorides high in river. Level not affected river is tidal influenced.
3550052	Chesapeake - South Norfolk system	City of Norfolk	V	This portion of the city is consecutive to (receives water from) the city of Norfolk. Because Norfolk decided to go on voluntary restrictions, Chesapeake has decided to follow the regional lead.
3570150	Colonial Heights	ARWA	M	
3595250	Emporia	Meherrin River	N	S - Water is going over the dam.
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.
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	V	S - As of 10/16, reservoirs are at 72.2% of total capacity. Historic reservoir capacity at this time of year is 82.7%. Avg. pumping from Lake Gaston = 59.3 MGD; Blackwater River = 0 MGD (pump off 09/17); Nottoway River = 10 MGD (pump on 05/30). Deep wells = 3.9 MGD (pumps on 05/29). Western Branch reservoir 5.0 ft below spillway; Lake Wright 1.1 ft below spillway; Lake Prince = 3.1 ft below spillway; Burnt Mils = 7.3 ft below spillway; remaining sources flowing over spillways. As of press release dated 10/08/07 the city requested voluntary restrictions.

		Wright. Lake Gaston.		
3730750	Petersburg	ARWA	V	Council Meeting 10/18 will probably make restrictions mandatory to be in line with ARWA.
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	V	S - As of 10/12, reservoirs are at 70% of useful capacity. Median capacity for the month is is 92%, average capacity is 85% (period of 1969-2006). Both emergency w ells are ON and pumping 3.0 MGD. Estimated 170 days of storage remaining at current pumpage (16.0 MGD) and no rainfall. Call for voluntary conservation was announced by press release on 10/10/07.
3800805	Suffolk	Lone Star Lakes, Cumps Mill Pond	V	S-10/17 Will follow Portsmouth's lead and the region as far as conservation. Have stopped pumping from Crumps Mill Pond because level is too low. Did not want to damage bulkhead. Lone Star Lakes is at 75% capacity. Should recharge quickly after a good rain event.
3810900	Virginia Beach	Norfolk	V	S - obtains water from Norfolk. Called for voluntary conservation by press release on 9/19/07.
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	M & V	Population served 200000; Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights. Low water levels; mandatory & voluntary restrictions in place.
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	M	Population served 271400; in effect Monday, Oct. 15. purchases water from the City of Richmond and the Appomattox River Water Authority.
4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N	Population served 2100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	Population served 8870; reservoir at 88%.
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	V	Population served 2500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	N	Population served 9300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	V	Population served 55000
4085770	SPRING MEADOWS-MEADOW GATE	Groundwater wells	V	Population served 2300
4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	V	Population served 280000; similar to City of Richmond
4101900	WEST POINT, TOWN OF	Groundwater wells	N	Population served 3000
4127110	DELMARVA PROPERTIES	Groundwater wells	N	Population served 7700

41456 75	POWHATAN COURTHOUSE	Groundwater wells	N	Population served 2600
41932 80	COLONIAL BEACH, TOWN OF	Groundwater wells	N	Population served 3300
47601 00	RICHMOND, CITY OF	Surface water; James River	V	Population served 489000;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.
50090 50	Amherst, Town of	Buffalo River/Mill Creek Lake	M	low flow in river
51471 70	Farmville, Town of	Appomatox River	V	low flow in river
60334 25	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.
60470 70	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.**
60475 00	Town of Culpeper	Lake Pelham	V	W -- Reservoir level declining, now at 34 inches below overflow level. Mandatory restrictions expected soon.
60612 00	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.
60616 00	Town of Warrenton	Reservoir on Cedar Run and groundwater	V	W -- Reservoir level declining.
61071 50	Town of Hamilton	Groundwater	V	S
61072 21	LCSA Lenah Farms	Groundwater	V	S
61073 00	Town of Leesburg	Potomac River	N	S
61073 50	Loudoun County Sanitation Authority	Purchase treated surface water from FCWA (Potomac River) and City of Fairfax (Goose Creek Reservoir)	M	W -- Levels in Goose Creek Reservoir and off-stream Beaverdam Reservoir continue to decline. City of Fairfax has been purchasing additional finished water from Fairfax Water to meet demands at LCSA.
61074 00	Town of Lovettsville	Groundwater	V	S
61074 50	Town of Middleburg	Groundwater	V	S
61076 00	Town of Purcellville	Hirst Reservoir and groundwater	M	W -- Reservoir has less than 60 days storage remaining. Wells are being closely monitored and production remains consistent without any impacts from drought thus far.
61076 50	Town of Round Hill	Groundwater	M	W
61132 00	Town of Madison	White Oak Run	N	S -- Stream flow remains adequate to meet normal demands.
61373 00	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.
61374 00	Town of Gordonsville	Purchase treated surface water	M	W -- Mandatory restrictions dictated by Orange's raw water withdrawal permit issued by DEQ.

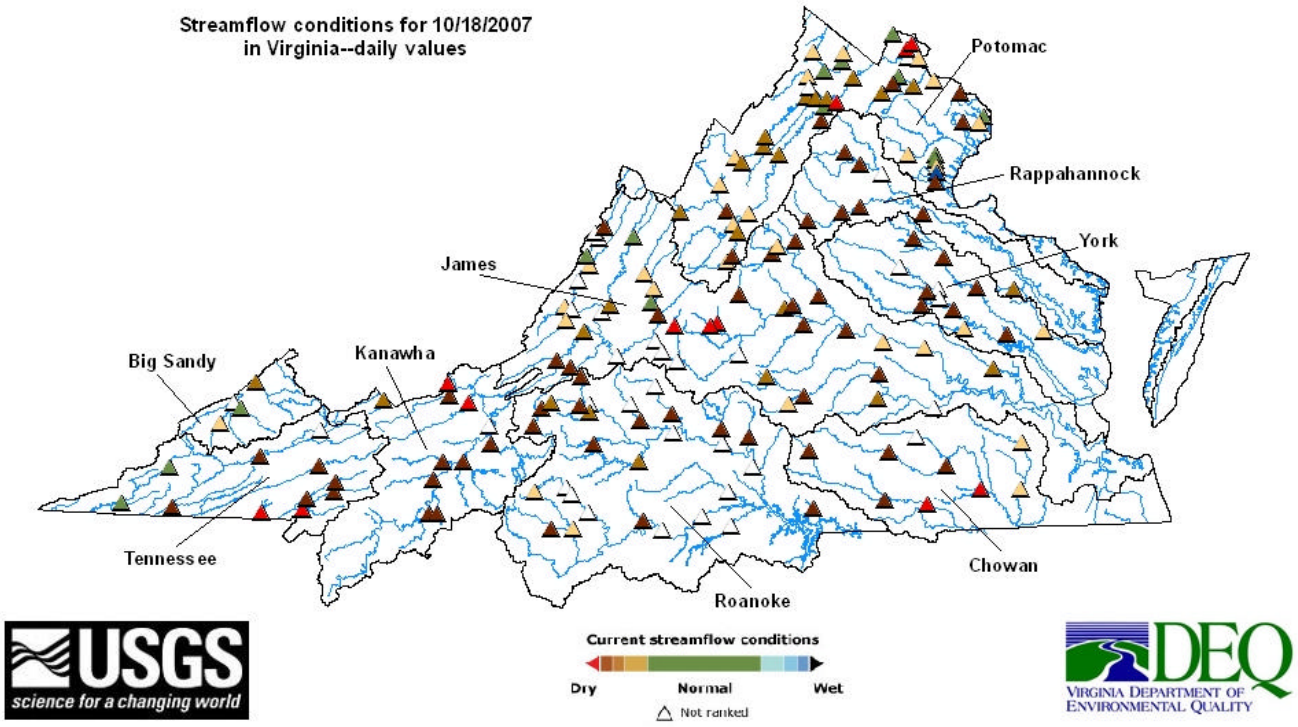
		from RSA and Town of Orange		
61375 00	Town of Orange	Rapidan River	M	W -- Mandatory restrictions dictated by raw water withdrawal permit issued by DEQ. 50 MG raw water storage reservoir is full.
61379 99	Rapidan Service Authority - Wilderness and Lake of the Woods	Rapidan River	M	W -- Mandatory restrictions in effect on 10/15/07 and dictated by RSA's raw water withdrawal permit issued by DEQ
61532 60	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.**
61536 75	Quantico Marine Corps Base - Mainside	Breckenridge, Lunga, and Gray Reservoirs	N	S
66001 00	City of Fairfax	Goose Creek Reservoir	V	W -- Withdrawals from Goose Creek Reservoir have been minimized to around 2.5 mgd with all of the treated water going to LCSA. Treated water purchases from FCWA have been increased.
66851 00	City of Manassas	Lake Manassas	V	W -- Withdrawals from Lake Manassas have been reduced significantly to about 8 mgd with all wholesale customers cut-off. Treated water is being purchased from FCWA via PWCSA, and all wholesle customers are being served by FCWA. Mandatory restrictions expected next week.
60595 00 and 60595 01	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.
61772 80 and 61773 00	Spotsylvania County	Motts Run Reservoir, Rappahannock River, Ni River Reservoir, and Hunting Run Reservoir (Rapidan River off-stream reservoir)	N	S
61791 00 and 61797 75	Stafford County	Smith Lake and Abel Lake	M	W -- Reservoir levels continue to decline with about 100 days of raw water storage remaining. Mandatory restrictions went into effect 9/17/07 and were increased on 10/8/07.

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 meterological, 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%.

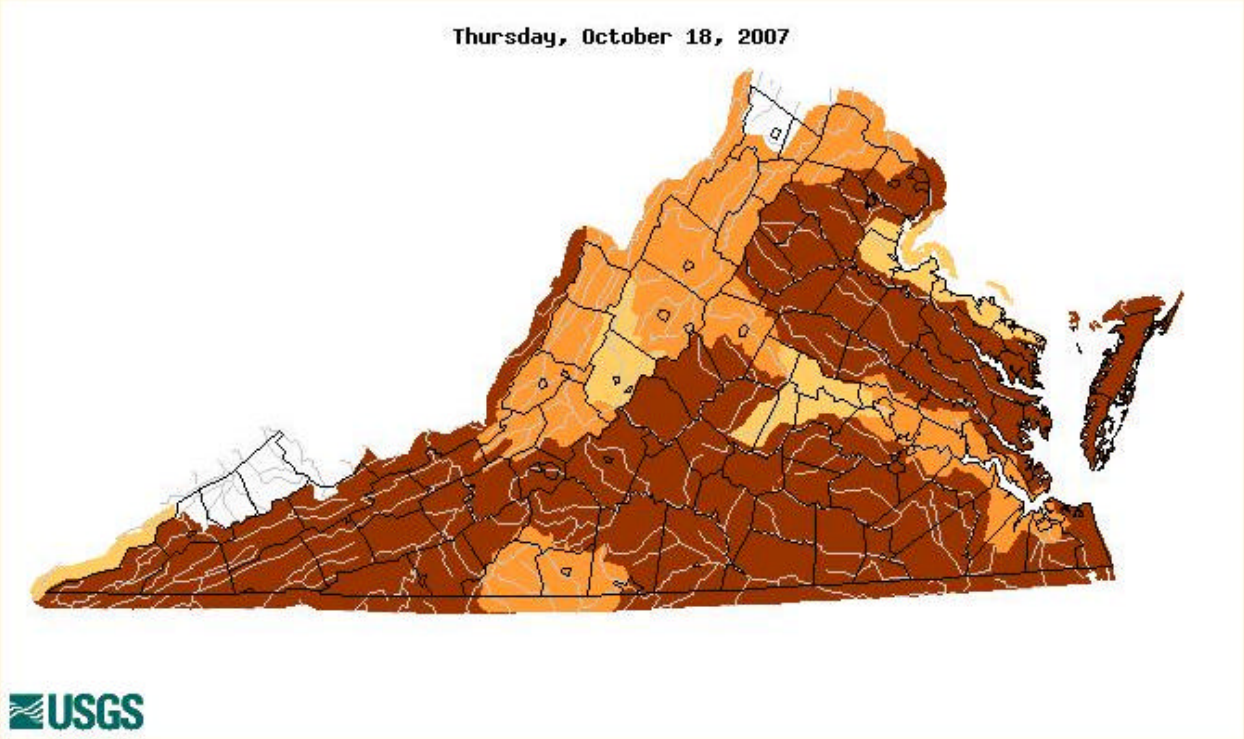
APPENDIX F


Streamflow conditions for 10/18/2007
in Virginia--daily values
Potomac
Rappahannock
York
James
Big Sandy
Kanawha
Tennessee
Chowan
Roanoke
USGS
science for a changing world
Current streamflow conditions
Dry
Normal
Wet
Not ranked
DEQ
Virginia Department of Environmental Quality

APPENDIX G

Drought Watch -- *USGS State Information on Drought*

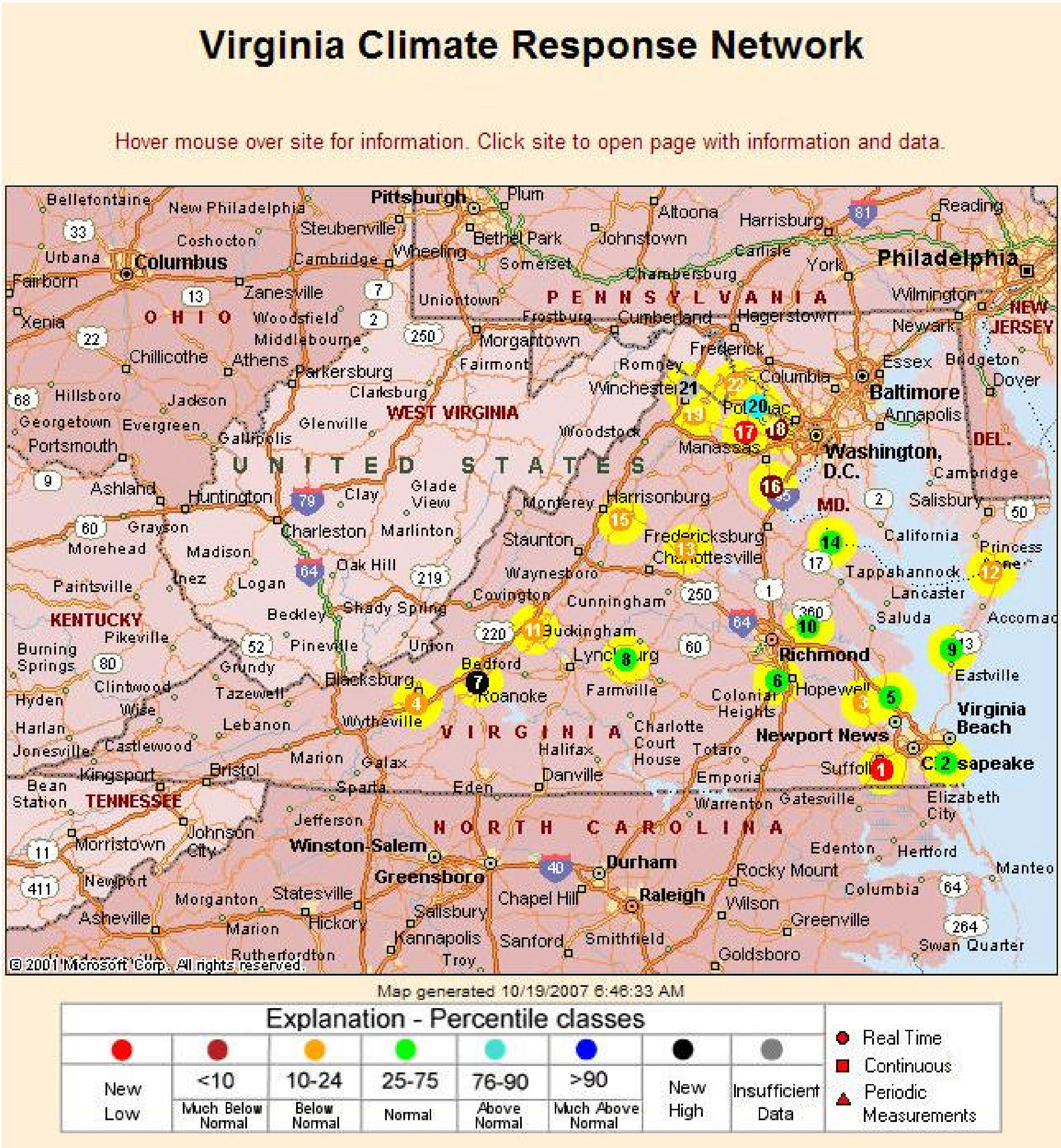
Map of below normal 7-day average streamflow compared to historical streamflow for the day of year (Virginia)



Click map to obtain more detailed drought information for the state

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
Hover mouse over site for information. Click site to open page with information and data.
OHIO
WEST VIRGINIA
PENNSYLVANIA
KENTUCKY
TENNESSEE
VIRGINIA
NORTH CAROLINA
MD.
DEL.
NEW JERSEY
UNITED STATES
Pittsburgh
Columbus
Philadelphia
Baltimore
Washington, D.C.
Richmond
Newport News
Virginia Beach
Winston-Salem
Greensboro
Durham
Raleigh
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Map generated 10/19/2007 6:46:33 AM
Explanation - Percentile classes
New Low
<10 Much Below Normal
10-24 Below Normal
25-75 Normal
76-90 Above Normal
>90 Much Above Normal
New High
Insufficient Data
Real Time
Continuous
Periodic Measurements