DROUGHT MONITORING TASK FORCE

Drought Status Report

September 24, 2007

Statewide precipitation for the current water year (beginning October 1, 2006) has dropped below the normal range for the first time this year (84% of normal), statewide precipitation in each successive shorter time period is increasingly below normal and the statewide precipitation for the last three week period is 48% 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 water year; Big Sandy (74%), New River (83%), Roanoke 84%, Northern Virginia (79%), Northern Piedmont (77%), Northern Coastal Plain (78%) and York-James (79%). Appendix A contains precipitation tables for periods going back to the beginning of the current water year. The long-range monthly climatological outlook calls for equal chances of below average, average, and above average temperatures and precipitation through October of 2007. The long- range seasonal outlook calls for equal chances of below average, average, and above average temperatures and precipitation through December 2007.

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 generally improved in the northern half of the Commonwealth during the last month. Drought conditions have increased in intensity in the southern half of the Commonwealth and exceptional drought conditions have materialized in portions of southwest Virginia. The NOAA seasonal drought outlook through December 2007 indicates that it is likely for drought conditions to persist in the southern half of Virginia that is currently experiencing significant drought impacts. This is the first time during 2007 that drought conditions have been predicted to persist through the next three months. The seasonal drought outlook is included as Appendix D.

Seven day average streamflows in the majority of the Commonwealth are in the below normal range of flows (10^{th} to 24^{th} percentiles) Seven day average streamflows in the Big Sandy, New River, Chowan, and Southeast Virginia drought evaluation regions reflect moderate hydrologic drought conditions (6^{th} to 9^{th} percentiles). Streamflows will likely continue to decline without periodic precipitation but this decline will be moderated as the current growing season comes to a close and the effects of evapotranspiration demands of actively growing vegetation diminish. 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 severe hydrologic drought ($< 10^{th}$ percentile) and five are at levels indicative of moderate hydrologic drought (10^{th} to 24^{th} percentiles). Levels of large reservoirs such as Lake Moomaw, Smith Mountain Lake, Kerr Reservoir, and Philpott Reservoir continue to decline 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 several systems in the Commonwealth have initiated voluntary and mandatory water conservation requirements. VDH reports that the following systems have initiated voluntary water conservation requirements; Town of Nickelsville, NCSA-Wintergreen, Town of Strasburg, Town of Front Royal, Town of Culpeper, Town of Hamilton, Town of Lovettsville, Loudon County Sanitation Authority, and City of Manassas. In addition VDH reports that the major public water supply systems in south Hampton Roads, the Richmond metropolitan area, and the area served by the Appomattox River Water Authority are currently in voluntary conservation. VDH reports that the following systems have initiated mandatory water conservation requirements; Crozet, Rivanna Water and Sewer Authority, Town of Scottsville, Stafford County, Town of Purcellville, Town of Round Hill, and the Woodbridge Mobile Home Park. In addition to public water supply impacts reported by VDH, the Virginia Department of Emergency Management reports that the Town of Amherst and the Nelson County Water Service Authority have initiated voluntary water conservation requirements. VDEM also reports impacts on private residential wells in Amherst County, Halifax County, and Nelson County.

The Virginia Department of Forestry reports that soil and fuel moisture readings are at historically low levels in some parts of the Commonwealth and may be a precursor to an exceptionally severe fall wildfire season that begins on October 15. During the first two weeks of September, the agency responded to 74 wildfires that burned 167 acres.

The Department of Game and Inland Fisheries reports that all hatcheries are operating at or near normal capacity and all of the Department's boat access sites are operational with the exception of those under scheduled maintenance or renovation. Impacts to wildlife populations in the Commonwealth from the drought have been minimal.

Drought impacts that were previously only impacting the agricultural sector have started to impact some water supplies and may impact forestry in the very near future. Absent widespread consistent precipitation it is likely that hydrologic impacts will intensify (lower streamflows and ground water levels) and the potential for impacts to water supplies will

increase. The increase in intensity of drought impacts is expected to slow with the end of the active growing season. The long range drought outlook that calls for drought impacts to persist for the next 90 days may be the harbinger of the onset of significant drought conditions next spring. While the majority of the Commonwealth is not currently experiencing significant drought impacts, the current moisture deficits coupled with a dry fall and winter could result in significant drought impacts in 2008.

Reports from the State Climatologist 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 State Climatologist with additional information from the National Weather Service

Although some regions have fared somewhat better overall, precipitation for the entire Commonwealth is below normal for September to date, with most of the state receiving about half of normal September precipitation. With some exceptions, thunderstorm activity across Virginia has been limited for the period as a persistent high pressure system has generally dominated. This situation will likely continue through most of the remainder of the month.

Despite increased tropical activity in recent weeks, moisture input from these systems has generally not reached Virginia. At this time of year, such sources contribute up to 40% of the long-term average rainfall in eastern portions of the state. The absence of tropical moisture is a virtual guarantee of drying conditions as the growing season comes to an end.

The greatest moisture benefit will come from the seasonal shift to cooler temperatures and reduced plants growth. As the growing season comes to an end, decreased evapotranspiration rates will result in surplus moisture if average rainfall is received. Even with the current precipitation deficit, net losses of moisture are now dramatically lower than last month.

The National Weather Service reports that widespread rainfall of an inch or more has not occurred in Virginia since late August. The next chance for rainfall is not expected until the September 27 or 28, when scattered showers and thunderstorms will accompany at strong cold front through the region. Widespread rainfall amounts of an inch or more are not currently expected, with most areas receiving one-half inch or less of rain. The 8-14 day outlook calls for the potential of above average rainfall during the first week in October. However, no specific forecasts of amounts are provided.

Virginia Department of Agriculture and Consumer Services

STATUS OF AGRICULTURAL DROUGHT

Overview

According to the USDA crop weather report for the week ending September 16, 2007, cooler weather and increased rainfall was experienced by most areas in the state. Pastures and hayfields remain stunted despite recent precipitation. Livestock sales are continuing with calves being reported as underweight in some areas due to the lack of forage. The corn harvest continues but was delayed a day or two because of rainfall. Preexisting dry conditions and a constant wind helped dry fields so farmers could continue harvesting. Yields vary vastly across the state and soybeans remain in a critical stage of production. The recent rainfall is expected to help soybeans fill their pods that have already been set. The tobacco harvest is coming to an end in some areas.

Due to extremely dry weather conditions, 65 localities have requested the Governor's assistance in obtaining federal disaster designation due to the drought. The disaster designation status report is attached as Appendix E. Appendix F contains a map depiction of the drought disaster designation requests prepared by the Virginia Department of Emergency Management.

Impact on Crops

Southeast Virginia

- Strawberries Statewide: With the lack of rainfall and dry conditions a number of strawberry producers across Virginia will be forced to consider delaying planting or possibly omit fumigation, so as not to delay planting. All fumigants have a "plant-back" requirement; this period varies from 2-3 weeks. Methyl bromide/chloropicrin has the shortest plant-back of any registered fumigant (2 weeks). In Southeast Virginia strawberry growers have plants arriving the week of September 25th. Most growers have been irrigating the fields in preparation for planting.
- Cotton: It takes a boll of cotton 40 days from flowering to maturity and many areas have received the heat units and

rainfall to make a small top crop. Unfortunately, most cotton plants have stopped producing due to drought stress and yields will be impacted. Water is the most critical factor when the plants are filling out bolls. There are a few fields in the northern part of the growing region where the drought stress has had a tremendous impact and only a few bolls have opened up. Defoliates are being applied and harvest has begun.

- Peanuts: Peanuts require about 25 days to mature, so they may have had a better chance to produce a late season crop. Most peanuts are now pulling away from the plant due to the drought conditions. There are very few early season peanuts this year (the ground was too dry and hard to let the bloom peg during the first try); therefore, peanuts will not fare as well as the cotton this year in Virginia. A big concern of peanut producers is aflatoxin which would make the peanuts unfit for human consumption.
- Corn: Many farmers have begun to harvest their corn. Yields are extremely low thus far. Many producers are checking for aflatoxin before settling crop insurance claims.

South Central Virginia

- Corn is currently being harvested in the Tidewater and Southeastern parts of the state. Depending on the location, corn yields vary widely from 1/3 to 2/3 of a normal year. The northern part of the Tidewater and Northern Neck region has seen the worst of the drought.
- Tobacco: Flue-Cured tobacco yields are estimated to have been reduced by 15-20 percent as compared to a normal expected yield. Quality has also been negatively impacted by the dry weather and periods of abnormally high temperatures. Rainfall of 1-1.5 inches fell over most of the area on 9/14 and will have a positive impact on the quality of the remaining unharvested tobacco, but will have very little impact on overall yield.

Soybean Crop

- The soybean crop has developed well after the rains that prevailed during the middle of August. However, the current dry spell is becoming a greater problem every day. The beans are at the fill out stage and they need rain to increase the bean size. If the crop does not get any rain over the next two weeks, producers will probably find reduced yields when they begin harvest.

Nursery/Horticulture

- The Virginia Nursery & Landscape Association reports that drought impacts have changed little during the last month. Areas that were dry are now drier. The upper Shenandoah Valley appears to be in better condition than most parts of the state due to recent rainfall. Recent rains in Tidewater have added to some irrigation ponds, but most water sources are getting very low. Some localities are beginning to implement water restrictions that could impact some nursery operations that depend on public water supplies. Nursery stock newly planted this year is especially vulnerable both in the nursery and in newly planted landscape situations. Without diligent watering, many of these newly planted plants will suffer root damage and will suffer next spring.

Impact on Livestock

South Central Virginia

- Some producers have been feeding hay since June or July. Due to the shortage of hay, some beef cattle producers are selling calves early and culling herds. Producers are considering selling some of their breeding stock. Many growers are seeking supplies of hay and alternative feeds.
- Pastures and hay have been extremely stressed. Late summer/early fall hay production will be minimal.

Pastures and Hay

- Lynchburg reports a general lack of hay available, which could trigger an increase in starvation cases among livestock and horses this winter.

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 expire October 1, 2007. VDACS has requested that VDOT and DMV revise the current waiver to include all localities recently designated as primary or contiguous disaster areas. VDACS has also asked that the current waivers be extended beyond October due to the continuing drought conditions.

Virginia Department of Environmental Quality
Condition of Major Reservoirs

The elevation of Kerr Reservoir is at 294.5 feet above msl, five feet below guide curve. The project has fallen 2 feet in the past month. The project has stopped producing the minimum amount of hydroelectric energy required by SEPA contract. SEPA has begun buying electricity on the open market to make up for lost productions at Kerr. Lower hydroelectric releases and recent rains on September 14 have slowed the rate of decline.

Lake Moomaw is currently at 1565 feet msl, 17 feet below full and has depleted 40% of its conservation pool. Inflow is 50 cfs and outflow is 236 cfs. The lake is losing about 4 per cent of its conservation storage per week. The level is not as bad as it was in 1999 when we completely depleted the conservation pool in the late Fall. We are in contact with the Corps of Engineers in Norfolk and may request reductions in the minimum release prior to the next report should the drought not abate.

Smith Mountain Lake is at 792.36 feet, 2.64 feet below. The lake has fallen 0.56 feet since the last report. DEQ can grant American Electric Power a 45 day variance to reduce minimum releases. The current variance will expire on September 30th and a new variance has been proposed and has been subject to stakeholder input that will reduce releases further.

The system of reservoirs owned by Rivanna Water and Sewer Authority is currently 89.6% full. This system had difficulty meeting demands in the 2002 drought when useable volume was depleted to the 50% level. The RWSA has declared a drought warning which is the second stage of a three stage conservation program.

United State Geological Survey
Streamflow and Ground Water Levels

Streamflow conditions are approaching low flows observed prior to the last rain in early September. Flow conditions are lowest along the Blue Ridge Mountains from Bristol to Culpeper with additional dry areas in the Rappahannock, York, and Chowan River Basins. Additionally, flows in some smaller basins in the Potomac River Basin have fallen to levels well below the normal range of flows. Streamflow conditions based on daily values for September 20 are presented in Appendix G

Water levels in water-table wells in the Valley and Ridge, Blue Ridge, and northern Piedmont have declined to well below normal levels with two wells possibly setting new monthly low records. Water levels in wells in the central and eastern portions of the state tend to be in the normal range for September. Ground water levels based on conditions on September 20 are presented in Appendix H.

Because no significant precipitation is expected across the state, streamflows and ground water levels are expected to continue to drop. However, because of reduced temperatures and evaporation, the streamflow and water-level recessions will not be as steep as they were in August.

Virginia Department of Game and Inland Fisheries

Impacts to wildlife populations in the Commonwealth from the drought have been minimal. There has been a higher then normal incidence of Hemorrhagic Disease (H.D.) in deer which typically occurs during periods of hot dry weather. Currently 29 counties have reported cases of H.D. With hunting seasons getting under way the Department is reminding people of the importance of using caution with any materials that could result in increased risk of fire.

All Department boating access facilities are open and functioning. Many rivers are extremely low requiring canoe and kayak users to drag and carry their water craft through shallow areas. Impact at the Departments hatcheries has been minimal to date with adequate numbers of two year old trout being held to make up for slower growth rates of yearling fish. The most significant concern is with the extremely low stream flows in western portions of the state where trout stocking is scheduled to begin October 1st. If significant rainfall does not occur in the near future the fall trout program will need to be modified.

Department of Forestry

The agency has begun basic contingency planning in preparation for a significant fall wildfire season. Soil and fuel moisture readings are at historically low levels in some parts of the Commonwealth and can be a precursor to an exceptionally severe fire season. Virginia's normal fall wildfire season start date of October 15th is now less than one month away and activity is already at higher than normal levels. During the first two weeks of September, the agency responded to 74 wildfires that burned 167 acres. The leading cause of these wildfires continues to be human carelessness during debris burning.

The agency plans to stage additional wildfire resources in the western parts of the state just before Halloween to battle the normal upswing in arson related wildfire starts during this period. If the dry weather continues, this will likely be the start of the busiest period for fall activity, which can be expected to last up through early December.

Additional fire prevention specialists will be available through a joint effort with the states of Tennessee and Kentucky. These states are facing wildfire conditions similar to those in Virginia.

APPENDIX A

Precipitation departures by Drought Evaluation Region.

PRELIMINARY PRECIPITATION SUMMARY

Prepared: 9/21/07

	DROUGHT REGION	OBSERVED	Sep 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	1.07	2.30	-1.23	47%
2	New River	1.55	2.28	-0.72	68%
3	Roanoke	2.03	2.82	-0.79	72%
4	Upper James	1.91	2.33	-0.42	82%
5	Middle James	0.79	2.76	-1.96	29%
6	Shenandoah	1.53	2.45	-0.92	62%
7	Northern Virginia	0.81	2.72	-1.91	30%
8	Northern Piedmont	0.74	2.85	-2.11	26%
9	Chowan	0.92	2.95	-2.03	31%
10	Northern Coastal Plain	1.24	2.72	-1.49	45%
11	York-James	1.90	3.27	-1.37	58%
12	Southeast Virginia	0.65	2.96	-2.30	22%
13	Eastern Shore	1.52	2.40	-0.89	63%
	Statewide	1.28	2.67	-1.39	48%

	DROUGHT REGION	OBSERVED	Aug 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	2.26	6.13	-3.87	37%
2	New River	2.75	5.58	-2.84	49%
3	Roanoke	2.86	6.54	-3.68	44%
4	Upper James	3.36	5.66	-2.31	59%
5	Middle James	3.51	6.58	-3.06	53%
6	Shenandoah	4.30	5.78	-1.48	74%
7	Northern Virginia	2.67	6.56	-3.90	41%
8	Northern Piedmont	3.12	6.67	-3.55	47%
9	Chowan	2.93	7.26	-4.33	40%
10	Northern Coastal Plain	2.68	6.59	-3.90	41%
11	York-James	4.23	8.13	-3.91	52%
12	Southeast Virginia	4.13	8.07	-3.94	51%
13	Eastern Shore	4.01	6.28	-2.27	64%
	Statewide	3.15	6.50	-3.35	48%

	DROUGHT REGION	OBSERVED	Jul 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	6.75	10.61	-3.86	64%
2	New River	5.67	9.37	-3.70	61%
3	Roanoke	6.13	10.93	-4.80	56%
4	Upper James	5.70	9.71	-4.01	59%
5	Middle James	5.87	10.99	-5.12	53%
6	Shenandoah	6.30	9.54	-3.24	66%
7	Northern Virginia	5.13	10.33	-5.20	50%
8	Northern Piedmont	4.65	11.07	-6.42	42%
9	Chowan	5.99	11.78	-5.79	51%
10	Northern Coastal Plain	4.10	11.04	-6.93	37%
11	York-James	7.67	13.23	-5.56	58%
12	Southeast Virginia	7.44	13.14	-5.70	57%
13	Eastern Shore	6.10	10.28	-4.18	59%
	Statewide	5.88	10.84	-4.96	54%

	DROUGHT REGION	OBSERVED	Jun 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	9.49	14.75	-5.26	64%
2	New River	8.71	13.22	-4.51	66%
3	Roanoke	9.06	14.82	-5.76	61%
4	Upper James	9.45	13.41	-3.96	70%
5	Middle James	9.22	14.50	-5.27	64%
6	Shenandoah	9.57	13.24	-3.67	72%
7	Northern Virginia	7.07	14.19	-7.12	50%
8	Northern Piedmont	6.80	15.07	-8.27	45%
9	Chowan	8.20	15.43	-7.23	53%
10	Northern Coastal Plain	5.96	14.59	-8.64	41%
11	York-James	9.86	16.64	-6.79	59%
12	Southeast Virginia	10.66	16.75	-6.09	64%
13	Eastern Shore	11.35	13.25	-1.90	86%
	Statewide	8.74	14.63	-5.89	60%

	DROUGHT REGION	OBSERVED	May 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	11.24	19.57	-8.33	57%
2	New River	10.49	17.43	-6.94	60%
3	Roanoke	11.03	19.15	-8.12	58%
4	Upper James	11.47	17.70	-6.22	65%
5	Middle James	11.69	18.74	-7.05	62%
6	Shenandoah	11.76	17.09	-5.32	69%
7	Northern Virginia	8.33	18.53	-10.20	45%
8	Northern Piedmont	8.89	19.29	-10.40	46%
9	Chowan	11.09	19.51	-8.43	57%
10	Northern Coastal Plain	7.20	18.76	-11.56	38%
11	York-James	11.41	20.91	-9.50	55%
12	Southeast Virginia	12.63	20.61	-7.99	61%
13	Eastern Shore	13.09	16.77	-3.68	78%
	Statewide	10.77	18.89	-8.12	57%

	DROUGHT REGION	OBSERVED	Apr 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	15.71	23.33	-7.62	67%
2	New River	13.61	20.99	-7.38	65%
3	Roanoke	14.24	22.96	-8.72	62%
4	Upper James	14.97	21.10	-6.12	71%
5	Middle James	14.92	22.08	-7.16	68%
6	Shenandoah	15.34	20.01	-4.67	77%
7	Northern Virginia	12.06	21.83	-9.77	55%
8	Northern Piedmont	11.98	22.58	-10.59	53%
9	Chowan	15.52	22.94	-7.42	68%
10	Northern Coastal Plain	10.91	21.85	-10.93	50%
11	York-James	15.45	24.21	-8.76	64%
12	Southeast Virginia	17.14	23.86	-6.72	72%
13	Eastern Shore	17.64	19.69	-2.04	90%
	Statewide	14.41	22.31	-7.90	65%

	DROUGHT REGION	OBSERVED	Mar 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	18.84	27.58	-8.73	68%
2	New River	17.65	24.66	-7.01	72%
3	Roanoke	17.93	27.22	-9.29	66%
4	Upper James	18.61	24.89	-6.28	75%
5	Middle James	17.97	26.14	-8.17	69%
6	Shenandoah	18.22	23.20	-4.99	79%
7	Northern Virginia	15.22	25.49	-10.27	60%
8	Northern Piedmont	14.41	26.39	-11.97	55%
9	Chowan	18.09	27.31	-9.22	66%
10	Northern Coastal Plain	13.72	26.13	-12.40	53%
11	York-James	17.17	28.89	-11.72	59%
12	Southeast Virginia	19.08	28.06	-8.98	68%
13	Eastern Shore	19.42	24.00	-4.58	81%
	Statewide	17.48	26.35	-8.87	66%

	DROUGHT REGION	OBSERVED	Feb 1, 2007 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	20.24	31.15	-10.91	65%
2	New River	19.30	27.59	-8.29	70%
3	Roanoke	19.98	30.53	-10.55	65%
4	Upper James	21.06	27.73	-6.67	76%
5	Middle James	19.94	29.26	-9.32	68%
6	Shenandoah	20.27	25.61	-5.34	79%
7	Northern Virginia	18.06	28.16	-10.10	64%
8	Northern Piedmont	16.86	29.36	-12.50	57%
9	Chowan	20.26	30.48	-10.22	66%
10	Northern Coastal Plain	16.23	29.26	-13.04	55%
11	York-James	18.92	32.42	-13.50	58%
12	Southeast Virginia	21.35	31.56	-10.21	68%
13	Eastern Shore	22.21	27.19	-4.98	82%
	Statewide	19.57	29.48	-9.91	66%

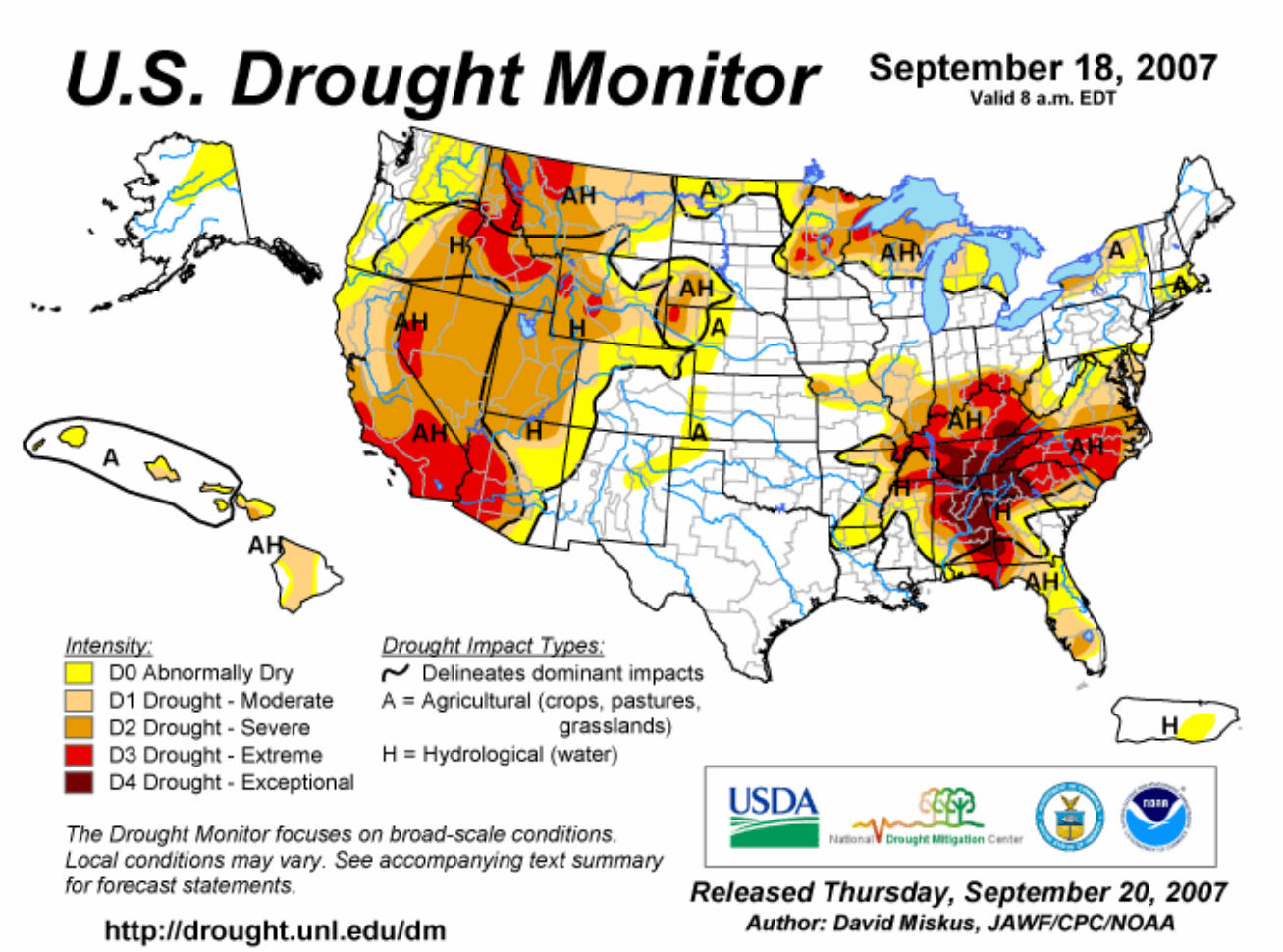
	DROUGHT REGION	OBSERVED	Jan 1, 2007 - Sep 20, 2007 NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	23.42	34.89	-11.46	67%
2	New River	22.26	30.80	-8.54	72%
3	Roanoke	23.86	34.45	-10.59	69%
4	Upper James	24.07	31.01	-6.94	78%
5	Middle James	23.52	32.92	-9.41	71%
6	Shenandoah	21.83	28.47	-6.63	77%
7	Northern Virginia	20.30	31.43	-11.13	65%
8	Northern Piedmont	19.37	32.88	-13.50	59%
9	Chowan	22.78	34.59	-11.81	66%
10	Northern Coastal Plain	20.47	33.02	-12.55	62%
11	York-James	21.53	36.55	-15.03	59%
12	Southeast Virginia	24.52	35.72	-11.21	69%
13	Eastern Shore	24.38	30.75	-6.37	79%
	Statewide	22.63	33.12	-10.49	68%

	DROUGHT REGION	OBSERVED	Dec 1, 2006 - Sep 20, 2007 NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	25.41	38.53	-13.12	66%
2	New River	24.04	33.51	-9.46	72%
3	Roanoke	26.04	37.70	-11.66	69%
4	Upper James	26.06	33.96	-7.90	77%
5	Middle James	25.10	36.10	-11.00	70%
6	Shenandoah	22.95	31.06	-8.10	74%
7	Northern Virginia	21.96	34.53	-12.56	64%
8	Northern Piedmont	21.13	36.15	-15.03	58%
9	Chowan	24.95	37.61	-12.66	66%
10	Northern Coastal Plain	22.17	36.29	-14.12	61%
11	York-James	23.35	39.94	-16.59	58%
12	Southeast Virginia	26.97	38.90	-11.93	69%
13	Eastern Shore	27.13	33.99	-6.86	80%
	Statewide	24.48	36.24	-11.76	68%

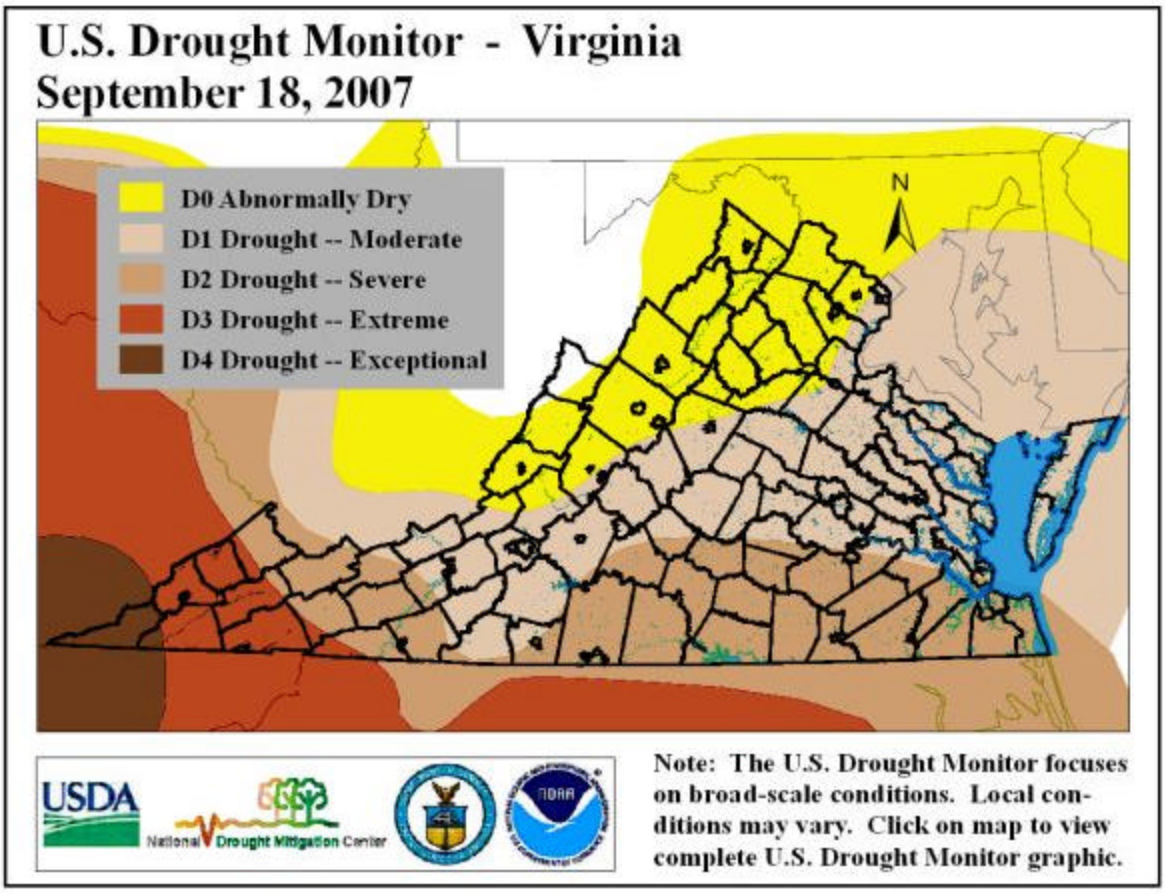
	DROUGHT REGION	OBSERVED	Nov 1, 2006 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	28.17	41.81	-13.65	67%
2	New River	28.00	36.54	-8.54	77%
3	Roanoke	31.43	41.06	-9.63	77%
4	Upper James	29.84	37.32	-7.47	80%
5	Middle James	30.83	39.61	-8.77	78%
6	Shenandoah	27.10	34.10	-7.00	79%
7	Northern Virginia	27.76	37.94	-10.18	73%
8	Northern Piedmont	27.43	39.95	-12.52	69%
9	Chowan	32.32	40.72	-8.41	79%
10	Northern Coastal Plain	27.47	39.43	-11.96	70%
11	York-James	29.01	43.31	-14.30	67%
12	Southeast Virginia	34.59	41.97	-7.38	82%
13	Eastern Shore	32.01	36.94	-4.93	87%
	Statewide	29.64	39.47	-9.83	75%

	DROUGHT REGION	OBSERVED	Oct 1, 2006 NORMAL	- Sep 20, 2007 DEPARTURE	% OF NORM.
1	Big Sandy	33.14	44.70	-11.55	74%
2	New River	32.98	39.71	-6.73	83%
3	Roanoke	37.47	44.78	-7.30	84%
4	Upper James	36.77	40.57	-3.79	91%
5	Middle James	38.53	43.44	-4.92	89%
6	Shenandoah	32.34	37.29	-4.95	87%
7	Northern Virginia	32.54	41.41	-8.87	79%
8	Northern Piedmont	33.96	43.94	-9.98	77%
9	Chowan	40.02	44.30	-4.28	90%
10	Northern Coastal Plain	33.55	42.94	-9.39	78%
11	York-James	37.01	46.84	-9.83	79%
12	Southeast Virginia	39.66	45.63	-5.97	87%
13	Eastern Shore	38.94	40.15	-1.21	97%
	Statewide	35.88	42.97	-7.09	84%

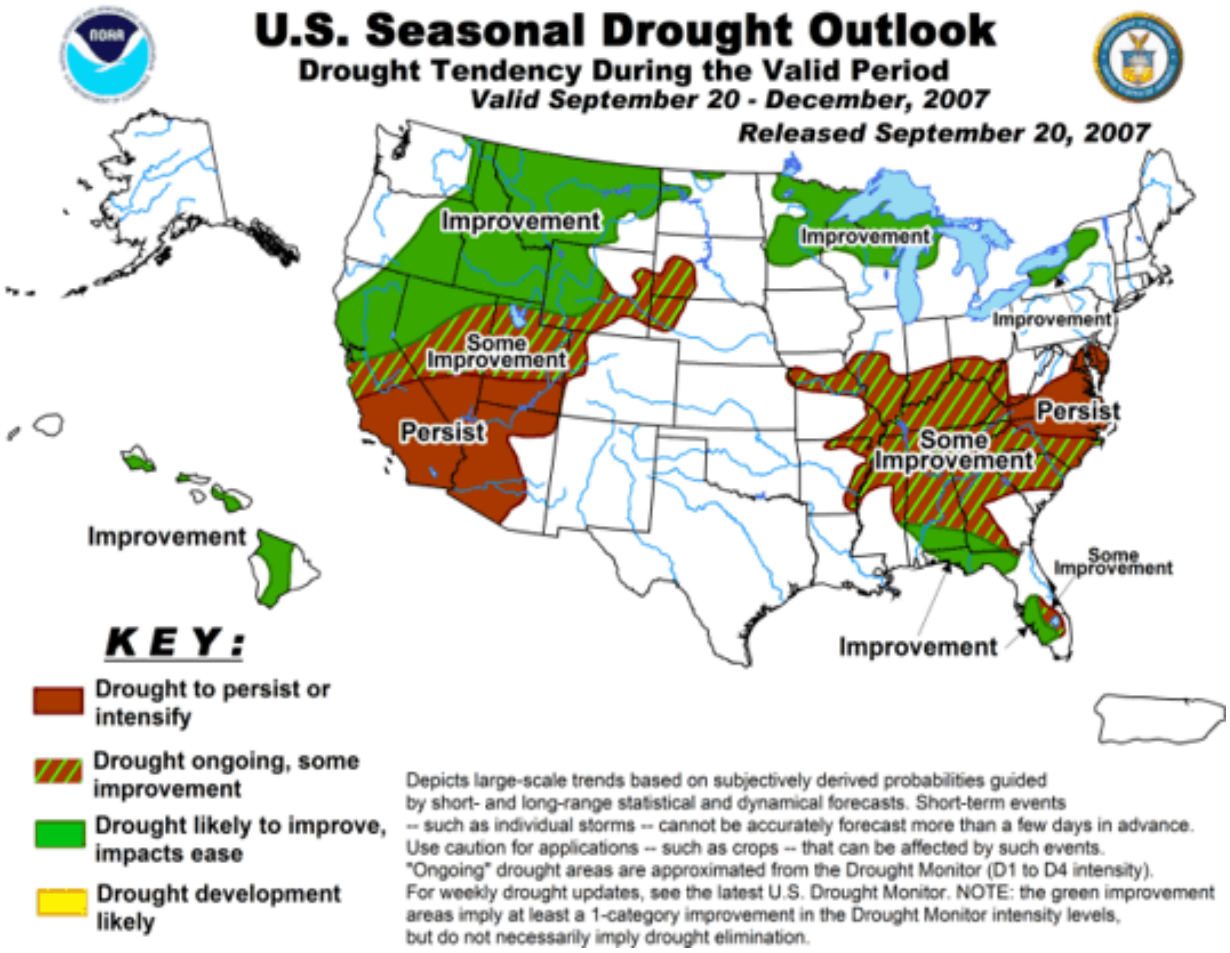
APPENDIX B


U.S. Drought Monitor
September 18, 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, September 20, 2007
Author: David Miskus, JAWF/CPC/NOAA

APPENDIX C


U.S. Drought Monitor - Virginia
September 18, 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 September 20 - December, 2007
Released September 20, 2007
Improvement
Improvement
Improvement
Some Improvement
Persist
Persist
Some Improvement
Some Improvement
Improvement
Improvement
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

2007 DISASTER DEIGNATION REQUESTS DUE TO DROUGHT
STATUS REPORT (9/26/07)

- 15 Virginia localities have been designated a primary disaster area by the U.S. Secretary of Agriculture due to drought and high temperatures:

Bedford County	King George County	Russell County
Bland County	Lancaster County	Scott County
Brunswick County	Lee County	Smyth County
Caroline County	Loudoun County	Washington County
Culpeper County	Orange County	Wise County

- 56 Virginia localities have been designated a contiguous disaster area by the U.S. Secretary of Agriculture due to drought and high temperatures:

Alleghany County (result of West Virginia designation)	Fauquier County	Madison County	Spotsylvania County
Albemarle County	Fairfax County	Mecklenburg County	Stafford County
Amherst County	Franklin County	Nottoway County	Tazewell County
Bland County	Giles County	Northumberland County	Westmoreland County
Buchanan County	Grayson County	Orange County	Wythe County
Botetourt County	Greensville County	Patrick County (result of NC designation)	City of Bristol
Brunswick County (result of NC designation)	Greene County	Pittsylvania County	City of Norton
Campbell County	Halifax County (result of NC designation)	Prince William County	City of Lynchburg
Caroline County	Hanover County	Pulaski County	City of Bedford
Carroll County (result of NC designation)	Henry County (result of NC designation)	Rappahannock County	City of Danville (result of NC designation)
Clarke County	King and Queen County	Richmond County	City of Suffolk (result of NC designation)
Culpeper	King George County	Roanoke County	
Dickenson County	King William County	Rockbridge County	
Dinwiddie County	Louisa County	Smyth County	
Essex County	Lunenburg County	Southampton County (result of NC designation)	

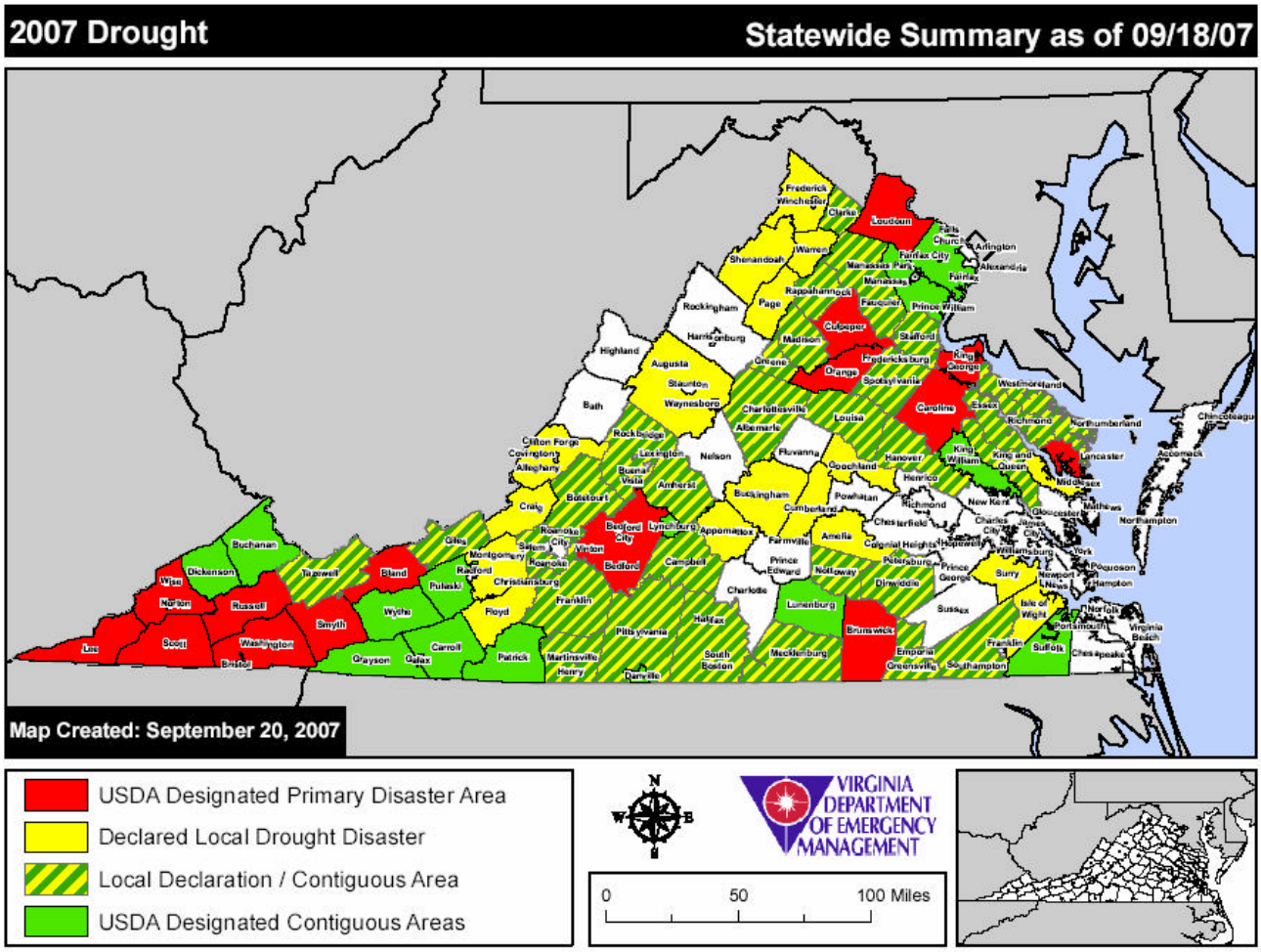
- 43 requests for primary designation are awaiting response from the U.S. Secretary of Agriculture.

Albemarle County	Fauquier County	King and Queen County	Roanoke County
Alleghany County	Floyd County	Louisa County	Rockbridge County
Amelia County	Franklin County	Madison County	Shenandoah County
Appomattox County	Frederick County	Mecklenburg County	Southampton County
Augusta County	Giles County	Montgomery County	Spotsylvania County
Campbell County	Greene County	Northumberland County	Stafford County
Clarke County	Greensville County	Nottoway County	Surry County
Craig County	Halifax County	Page County	Tazewell County
Cumberland County	Henry County	Pittsylvania County	Westmoreland County
Dinwiddie County	Hanover County	Rappahannock County	Warren County
Essex County	Isle of Wight	Richmond County	

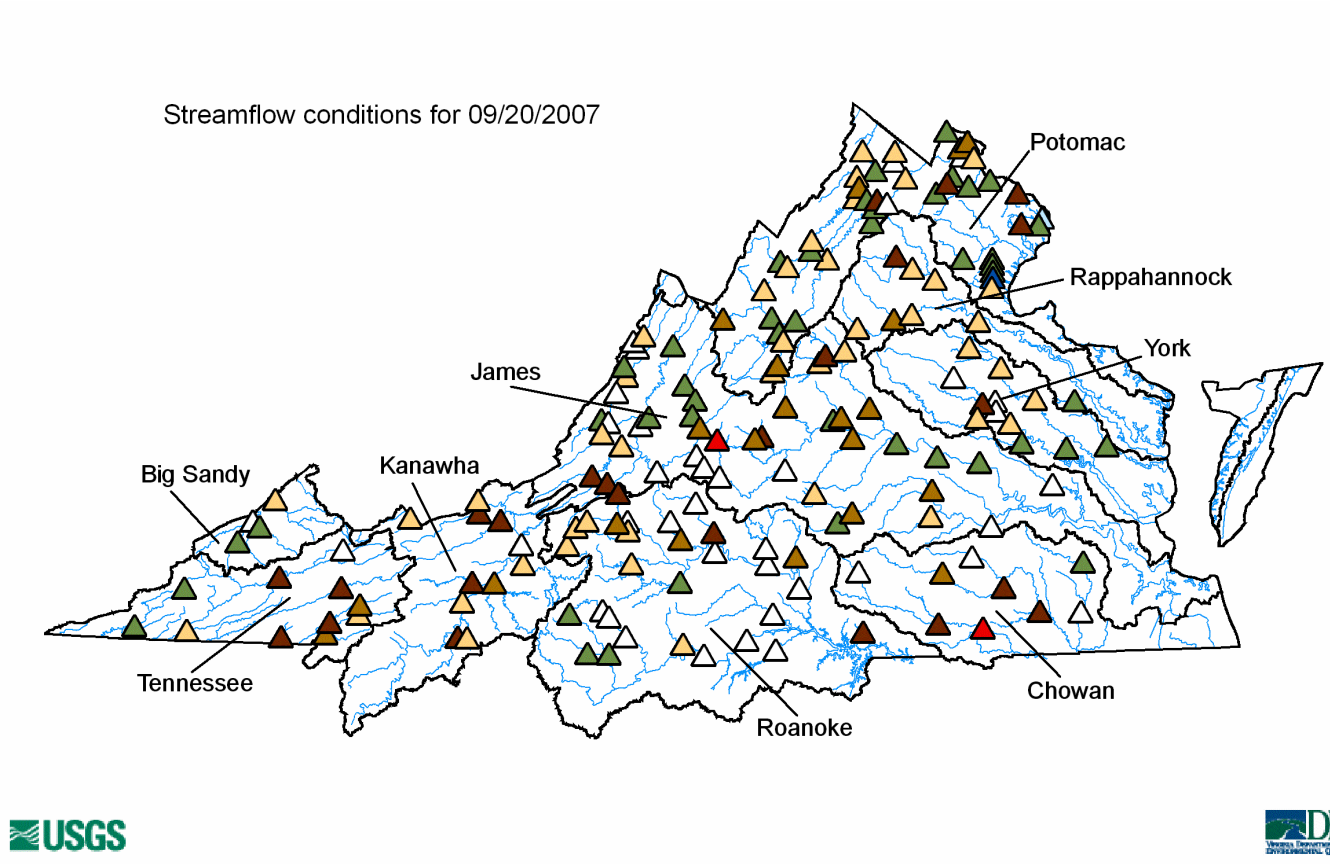
- 7 loss assessment reports are pending from USDA/Farm Service Agency in Virginia.

Locality	Resolution Date	Locality	Resolution Date
Amherst County	8/21/07	Nelson County	9/11/07
Botetourt County	8/28/07		
Buckingham County	9/10/07		
Goochland County	9/4/07		
Fluvanna County	9/5/07		
Middlesex County	9/4/07		

APPENDIX F

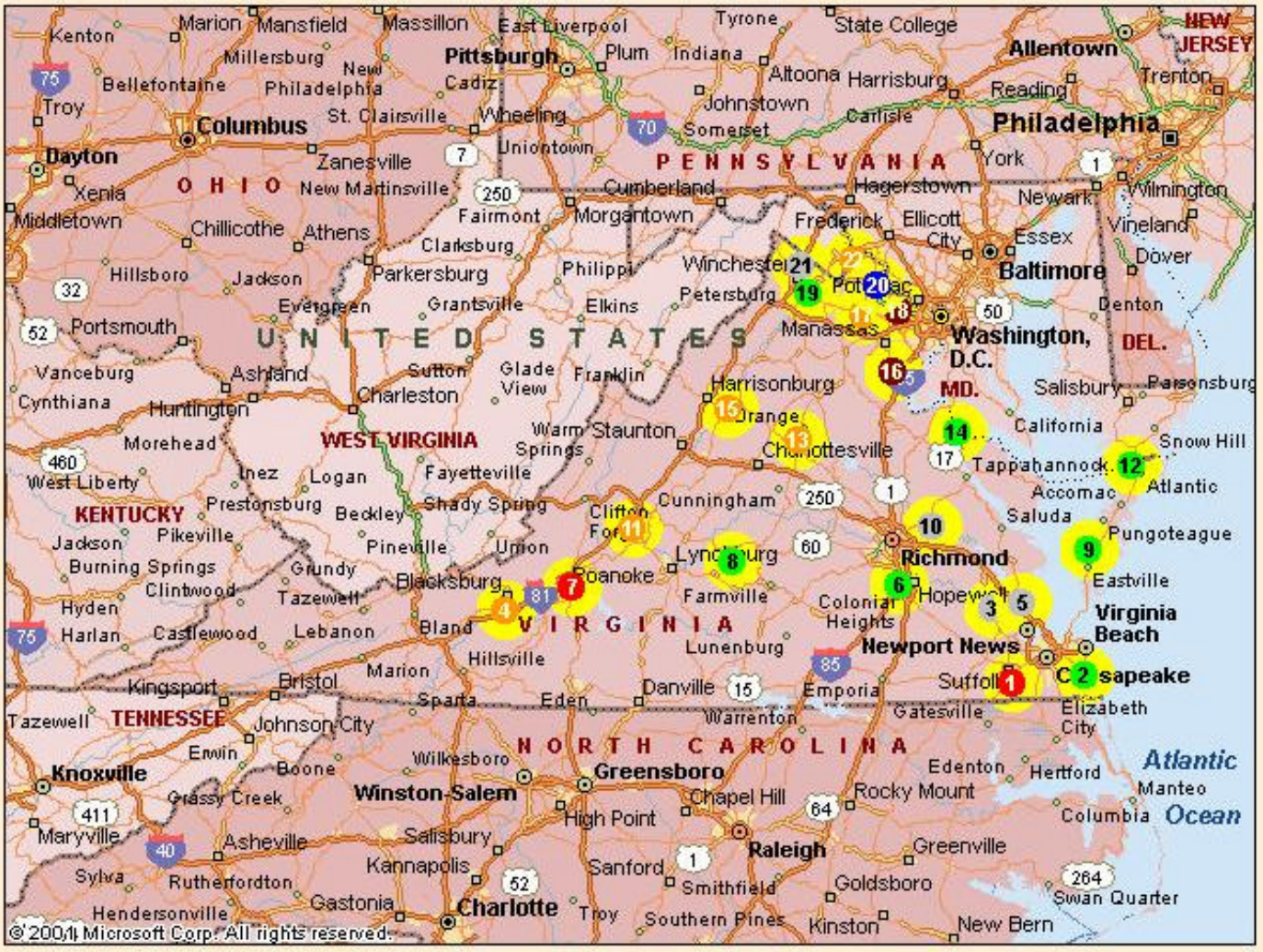

2007 Drought
Statewide Summary as of 09/18/07
Map Created: September 20, 2007
USDA Designated Primary Disaster Area
Declared Local Drought Disaster
Local Declaration / Contiguous Area
USDA Designated Contiguous Areas
N
W
E
VIRGINIA DEPARTMENT OF EMERGENCY MANAGEMENT
0
50
100 Miles

APPENDIX G


Streamflow conditions for 09/20/2007
Potomac
Rappahannock
York
James
Big Sandy
Kanawha
Tennessee
Chowan
Roanoke
USGS
DEQ
Streamflow Statistics based on average flows
Daily
7-Day
14-Day
28-Day
Click on map or table to select River Basin
Current streamflow conditions
Dry
Normal
Wet
Not ranked

APPENDIX H

Virginia Climate Response Network



Map generated 9/21/2007 6:46:04 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