

DROUGHT MONITORING TASK FORCE

Drought Status Report

July 19, 2002

The Department of Environmental Quality compiled the following drought status report from information provided by the State Climatologist, the Virginia Departments of Agriculture and Consumer Services, Health, Forestry, Emergency Management, Game and Inland Fisheries; the Virginia Cooperative Extension Service, Farm Service Agency-USDA, the National Weather Service, and the U. S. Geological Survey.

OVERVIEW

Drought conditions have remained stable since the report of July 8, 2002. Statewide rainfall for the first half of the month of July was 91% of long term average rainfall for this period. The occurrence of a statewide precipitation event on July 13 and 14 coupled with scattered thunderstorm activity produce enough moisture to stabilize most drought impacts for a short period of time. Typical summertime weather is predicted for the next two weeks with temperatures generally near 90 and the potential for a couple of rounds of scattered showers and thunderstorms. The long-range climatological forecast calls for below average precipitation through October 2002. Streamflows over the majority of the Commonwealth are well below levels that are expected in July and several areas are expected to set new record low streamflows for July. Streamflows reacted favorably to the precipitation event of July 13 and 14 but will decline to the previous low levels quickly due to a lack of ground water storage. Near normal precipitation from March through May slowed the decline in ground-water levels but it is unlikely that any significant ground water recharge will occur through the summer. Levels of large reservoirs such as Smith Mountain Lake, Kerr Reservoir, and Philpott Reservoir continue to decline despite variances to required minimum discharges. Lake Moomaw is currently operating under their normal summer water quality release which is supplying about one third of the flow measured in the James River near Richmond. While recent rainfall improved agricultural conditions slightly, below average rainfall in late May through June has adversely impacted agricultural concerns across the Commonwealth. Cattle producers are reducing herd sizes in some areas because of lack of water and lack of pasture and feed. Corn crops are reported to be dying in the field due to lack of sufficient moisture. There is a significant concern that pasture and haylands will die off due to lack of moisture and will have to be re-established in the fall. Wildfire threats have significantly increased as forest fuel moisture declined. Reservoir and stream levels that support public water supplies have declined since the last report. Ground water based public water supplies in Amherst, Appomattox, Augusta, Botetourt, Caroline, Clarke, Fluvanna, Fauquier, Loudoun, Nottoway, Shenandoah, and Warren Counties have reported dropping ground water levels or reduced yields. While little is known on private ground water based supplies, it is anticipated that individual domestic users, especially those that utilize water table aquifers, have been or will be impacted by low ground water levels. The Department of Game and Inland Fisheries continue operations at all nine aquaculture facilities. Lowered stream flows since the last statewide precipitation event in mid-May have reduced recreational opportunities in many areas.

CLIMATOLOGICAL CONDITIONS

National Weather Service

Rain fell across much of the Commonwealth July 12 and 13. Although isolated areas in northern, central and southeast Virginia received amounts in excess of 1 inch, most areas received one-half inch or less. The weather pattern over the next 7-15 days will be very typical of summer in the mid-Atlantic region, but more favorable for periodic rainfall. Temperatures during the period will range from the mid 80s to the mid 90s, with some day to day variability depending upon cloud cover and precipitation.

Rainfall will generally be diurnally based (i.e. afternoon and evening), and in the form of scattered showers and thunderstorms. The intensity and areal coverage of these scattered precipitation events cannot be predicted. However, showers and thunderstorms should affect the entire state between July 18 and 21. Most of the state should also receive 1 or 2 periods of showers and thunderstorms between July 22 and 31. While the forecast weather pattern during the next 2 weeks could benefit agricultural interests, there is unlikely to be significant positive impact on long term drought conditions.

The 30-day outlook through the month of August 2002 calls for equal chances of below average, average, and above average precipitation and temperatures.

The 90-day outlook through the month of October 2002 calls for below average precipitation and equal chances of below average, average, or above average temperatures.

The latest NOAA drought monitor indicates no significant increase in drought severity since the last report on July 8 and is included as Appendix A. Appendix B contains information from the national drought monitor with only Virginia displayed. The NOAA seasonal drought outlook has deteriorated and calls for current drought conditions to continue over most of the central portion of the state through October. Some improvement is forecast for southeastern Virginia. The seasonal drought outlook is included as Appendix C.

Report of the State Climatologist

The first two weeks in July have been characterized by frequent, though largely scattered thunderstorms and a statewide rain event on the weekend of July 13 and 14.

This statewide rain event produced totals averaging around 1.5 inches over most of the Shenandoah Valley with lesser amounts in other areas. Prior to this event scattered regions in the Valley, especially in Rockingham, Augusta, and Rockbridge Counties, were experiencing agricultural stress that was similar to that observed in August 1999. Radar composite images suggest the Shenandoah Valley received between two and four inches of precipitation between July 7 and 14 from a combination of scattered thunderstorms and the widespread rain event.

The scattered storms were also beneficial in southwestern, southeastern, and northern Virginia but were much more widely distributed and therefore less beneficial in the central portion of the state.

This recent rainfall has ameliorated agricultural drought impacts to some degree. Pastures that were dormant have shown some signs of growth although additional periodic rainfall will be required to produce any substantial growth. Many non-irrigated row crops in some areas of the state, such as corn in the Central Shenandoah Valley, sustained significant drought damage prior to the recent rainfall and will not produce normal yields given any amount of future rainfall. However, the recent rain will increase vegetative growth of these crops so that at least their potential for feed is enhanced.

The increased level of surface moisture will serve to cap daytime temperatures at considerably lower levels than observed before the precipitation. This means that in the near term the potential for ozone formation in urban areas will revert to its more normal summer background level, reduced from the exceedingly high levels observed in the beginning of July. This also implies that, as long as this moisture is available, an extreme heat excursion into the 105° range is unlikely. A return to very dry conditions in our urban areas is required to increase the potential for heat excursions.

The recent rain will have only a minimal effect on long-term moisture shortages. On the two-year horizon, the state is averaging about 81% of normal, with the largest deficits (73% and 74% of normal) occurring in the Eastern and Western Piedmont. Problems with residential wells and water systems can be expected to persist both in these regions and in the Shenandoah Valley.

The widespread precipitation event of July 13 and 14 was produced when a low pressure system encounter a stalled frontal boundary. As this system reached the Atlantic coast off of southern North Carolina, it began to acquire tropical characteristics that enhanced rainfall in eastern Virginia. It is noteworthy that long term indications are that another front will stall in the same region July 20 and 21. On the negative side, weak El Niño conditions in the Pacific are statistically associated with a lowered probability of tropical storm and hurricane rainfall in eastern Virginia.

Appendix D contains an updated table of precipitation departures for various intervals.

PROVISIONAL ASSESSMENT OF HYDROLOGIC CONDITIONS IN VIRGINIA

United States Geological Survey

Precipitation on July 13 and 14, boosted streamflow levels into the normal range of flow or just below the normal range of flow at many streamgages across the State. However, streamflow levels are expected to decline rapidly to the levels experienced prior to the precipitation event because of low ground-water storage levels.

Prior to rain on July 13, streamflow levels across the State generally were well below the normal range of flow expected during July. Streamgages in the Rappahannock, York, James, Chowan, and Roanoke River Basins were recording streamflow levels below normal with many gages setting new record minimums for July.

Streamgages in the Shenandoah, Potomac, and Kanawha River Basins were recording streamflow levels below the normal range of flow but above the minimum flow for the month. Streamgages in the Big Sandy and Tennessee River Basins were in or just below the normal range of flow.

Appendix E contains flow duration and current flow conditions for selected U.S. Geological Survey and Virginia Department of Environmental Quality surface-water gaging stations. Data are provisional and subject to revision. The normal range of flows is defined as flows in the middle two quartiles (between those flows equaled or exceeded 75 percent of the time and those flows equaled or exceeded 25 percent of the time).

Department of Environmental Quality, Status of Major Reservoirs

Smith Mountain Lake is 25 feet below full and falling. Inflow is approximately 230 cfs and outflow is 400 cfs. The lake is operating under a temporary variance from the FERC minimum release requirement of 650 cfs. The lake is expected to fall approximately one foot in July.

Kerr Reservoir is at 297.5 feet above mean sea level and falling. The lake is about two feet below the guide curve. Inflows are much below normal, on the order of 800 cfs; outflows are 3800 cfs. The Lake will probably fall about ten feet in the next two months. Releases are being made to make hydropower, maintain water quality, protect juvenile anadromous fish, and to keep salt water from encroaching into the lower Roanoke River so a major paper plant can stay in operation. The Wilmington District of the U.S. Army Corps of Engineers has worked hard since last October to get the lake in good condition for this critical time of the year. Recreational users of the lake will begin to notice adverse impacts, but the most severe adverse impacts will occur toward the end of the summer recreational season.

Philpott Reservoir near Martinsville is 7.9 feet below normal and slowly falling. Minimum releases have been cut back to one fourth of their normal amounts and even at this low level the lake is falling.

Lake Moomaw in western Virginia is 75% full and operating under their normal summer water quality release. Inflow is 62 cfs and outflow is 307 cfs. At this rate the lake loses 3% of its conservation pool every 5 days. These flow augmentation releases from Lake Moomaw contribute almost one third of the flow currently measured in the James River near Richmond. This flow augmentation release will probably continue through the summer but this rate of release will completely utilize the conservation pool in 3 to 4 months.

Lake Anna is currently at 247 feet above sea level and falling at about .1 foot per week. This level is three feet below full pool elevation. There is approximately three feet of additional elevation available in the lake before NRC licensing requirements will impact power production from the facility.

VIRGINIA AGRICULTURAL SITUATION

Virginia Department of Agriculture and Consumer Services

Local Disaster Designation Requests

Nineteen Virginia localities have submitted requests to the Governor for federal drought disaster designation. The U.S. Secretary of Agriculture has approved disaster designations for Goochland and Prince Edward Counties. Damage assessment reports have been completed and the Governor has asked the Secretary of Agriculture for disaster designation for Augusta, Bedford, Bland, Brunswick, Buckingham, Cumberland, Fluvanna, Louisa, Nelson, Orange, Page, Rockbridge, Rockingham and Wythe Counties. Damage assessment reports are pending from USDA for Campbell, Franklin and Pittsylvania Counties.

Soil/Crop Conditions

Virginia experienced some much needed rainfall July 13 and 14 slowing the deterioration of field crops, hay, and pastures stressed by continuing drought conditions. However, conditions are still very dry and water supplies across the state are quickly decreasing. Beef producers continued to feed hay due to a lack of pasture growth. Some farmers continued culling cattle due to lack of pasture growth and low water reserves. There were several reports of the tomato spotted wilt virus severely attacking the tomato crop. Hay yields remained well below average.

The Shenandoah Valley is currently the driest area of the state from an agricultural perspective. Farmers in this area report that corn is drying up in the field and dying and that some springs are drying up for the first time in 25 years.

In Southside Virginia the prolonged lack of rainfall has drastically reduced the amount of grazing available in pastures and many cattlemen will probably begin feeding hay in the next week or two. Producers have begun selling off their cattle due to reduced water supplies. This trend will increase over the next few weeks if significant rainfall does not occur.

In the Roanoke Valley agricultural drought conditions are critical. Pasture and hayland have ceased active growth and are completely brown. Agricultural conditions in the New River Valley and most of Southwest Virginia are not quite as bad but are still near critical. Ponds and streams are beginning to become a concern. The area has received some spotty thunderstorms that have provided localized temporary relief.

In Central Virginia ponds and streams are extremely low. Quite a few people are drilling new wells for agricultural water supplies. Corn is highly stressed and there has been no growth of hay to allow a second cutting. Pastures are showing signs of stress. It is anticipated that grass and hay will be killed as a result of the dry weather. Cattle producers are likely to experience monetary losses on three fronts: (1) selling cattle early on a depressed market due to inadequate water supplies, (2) no second cutting of hay resulting in inadequate feed supplies during the winter of 2002-2003, and (3) the added expense of having to reseed pastures and haylands this fall.

Northern Virginia ponds are in fair to good condition. However, two weeks of hot dry weather could dramatically increase agricultural drought impacts.

Tables describing topsoil moisture, crop condition, and crop progress are contained in Appendix F.

Virginia Cooperative Extension Service

A June 24, 2002 survey of Virginia Cooperative Extension Agriculture and Natural Resource Agents indicates that agricultural conditions are deteriorating rapidly across the state. Sporadic scattered thundershowers have not provided enough moisture to remedy the dry conditions. Agricultural conditions are not quite as critical in the southeastern area of the state and the Northern Neck region; however those areas are also in need of rainfall soon.

Livestock producers in numerous counties are feeding hay as a result of pasture growth being severely limited by lack of moisture. Some producers are hauling water to livestock. Producers in some counties are selling cattle and calves to reduce stocking rates.

Row crops are drought stressed over most of the state. Corn growth is stunted and plants are beginning to tassel at much shorter heights than in a normal year. Hot dry days significantly reduce the ability of corn to pollinate thus reducing yield potential. As a result of minimal shallow topsoil moisture some producers have stopped planting soybeans. Soybeans that have been planted are showing little growth in most areas of the state.

Pond levels remain low over much of the state. This poses a major problem for crops that require irrigation and livestock producers who rely on ponds for livestock water.

Without significant sustained rainfall soon, the agricultural situation in Virginia will continue to deteriorate creating major problems for farmers over most of the state.

FOREST SITUATION IN VIRGINIA

Virginia Department of Forestry

Wildfire Conditions

Wildfire activity has returned over the last two weeks as drought like conditions return with high daily temperatures and the lack of periodic precipitation. The threat of lightning caused wildfire continues due to the long-term drought, dry forest conditions, and summertime thunderstorms. The largest cause of wildfires in the state continues to be human activities. Amherst, Bedford, Campbell and Pittsylvania Counties and the City of Lynchburg have enacted local open burning bans.

Observed fire behavior over the last two weeks indicates that wildfire occurrence, rate of spread and intensity is much greater than would normally be expected at this time of year. The low forest fuel moistures resulting from long term precipitation deficits are definitely making fire operations more difficult and dangerous, regardless of the season.

The agency is particularly concerned about the potential for a severe fall fire season. Current long-term predictions indicate that the fall wildfire season in Virginia has the potential be even more severe than what was experienced last fall. The agency has continued its focus on the training of new fire resources for the state, exploration of new fire suppression technologies, and in maintaining the continued close working relationships with other cooperating agencies, to ensure adequate fire readiness when faced with another severe wildfire season.

Through June 30, theVDOP has responded to 1252 wildfires for over 10,717 acres this calendar year. This activity is above the normal five and ten year averages.

PUBLIC WATER SUPPLY SYSTEMS

Virginia Department of Health

Decreased rainfall and higher evaporation rates associated with summer have decreased reservoir and stream levels in most areas of the state.

Mandatory water restrictions are in place in the City of Roanoke, Craigsville, Spotsylvania County, City of Fredericksburg, Chesapeake, Portsmouth, Town of Amherst, and Town of Appomattox. In Caroline County, Lake Caroline and Campbell's Creek Subdivision have initiated mandatory water restrictions.

Voluntary water restrictions are in place in the City of Richmond, Chesterfield, Hanover, Henrico, Williamsburg, Suffolk, Leesburg, Town of Hamilton, Town of Gretna, Town of Hillsboro, Town of Lovettsville, Stafford, Amherst, Henry, Town of Burkeville, and James City County. Some public water supplies in Augusta, Botetourt, Louisa, Charlottesville, Clarke, Albemarle, and Fluvanna County have initiated voluntary water conservation measures.

Ground water based public water supplies in parts of Amherst, Appomattox, Augusta, Botetourt, Caroline, Clarke, Fluvanna, Fauquier, Loudoun, Nottoway, Shenandoah, and Warren County have reported dropping water levels or reduced yields from wells and springs. Efforts to drill new wells and repair leaking water lines have been initiated and lessened the impacts.

Several areas have reported failure of private wells. In Campbell County there have been 150 well replacement permits issued this calendar year and the Board of Supervisors has declared a drought emergency.

Appendix G contains detailed reports of public water supply conditions in the six field offices. The Abingdon Field Office has no reported problems or issues with either ground water or surface water sources.

FISHERIES AND RECREATIONAL IMPACTS

Virginia Department of Game and Inland Fisheries

Streamflows across the state have declined to near record low flows since the last statewide rainfall event in mid-May. Many portions of major recreational rivers, such as the James, Shenandoah, and Roanoke are only accessible utilizing non-powered watercraft, and in many areas, the low flows have limited accessibility even for these craft. Reservoir levels improved with the spring rainfall events, and are providing summer-time recreation with no closure of Department ramps on lakes and reservoirs. Groundwater supplies continue to decrease, however at this time there are no problems in the operation of the Department's nine (9) fish hatcheries. A flow variance was granted to American Electric Power in order to reserve water in the lake to support stream flows as the drought continues, protect the summer recreational pool in Smith Mountain Lake, and allow boating opportunities downstream during peak weekend recreational periods.

LOCAL EMERGENCY DECLARATIONS/REQUESTS FOR ASSISTANCE

Virginia Department of Emergency Management

Amherst County declared a local emergency on June 26 banning private use of fireworks and open burning. The declaration also requires voluntary water conservation and anticipates requiring mandatory water conservation if reservoir levels continue to decline. Amherst is not seeking state assistance at this time.

Campbell County has initiated actions under the VDEM potable water supply shortage procedures. Campbell is experiencing private well failures county wide. In one area existing geologic conditions are not favorable for well development and the county has planned a water line extension to serve the impacted area. On June 20 representatives from VDEQ, VDH, and Campbell County met to assess the water shortage and to develop plans to address the shortage. Campbell County intends to make treated public water available to residents in the impacted area by providing temporary water distribution sites at three locations. Campbell is not seeking additional state assistance at this time.

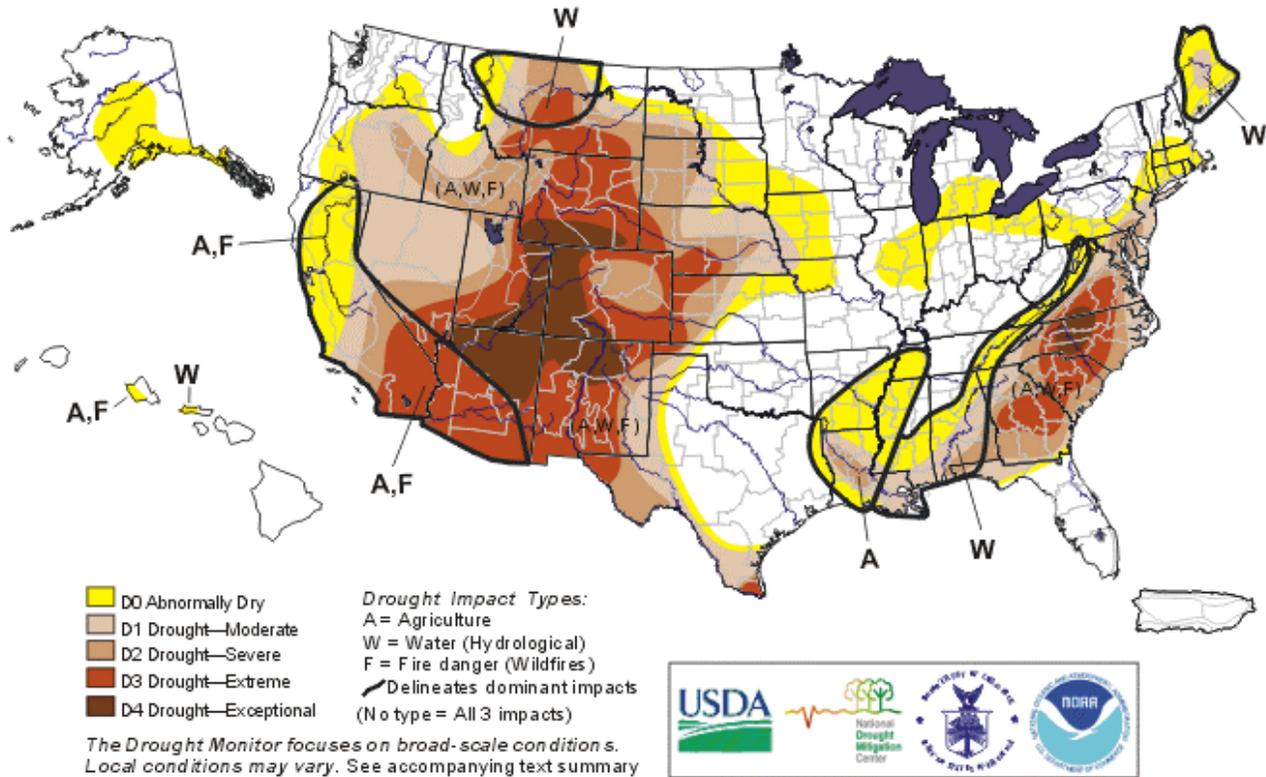
VDEM has requested that all local emergency managers review their plans for summer heat related emergencies. As part of this request the local emergency managers have been asked to identify if they have a local plan in place to deal with these emergencies, including any plans for establishing local emergency cooling centers.

APPENDIX A

U.S. Drought Monitor

July 16, 2002

Valid 8 a.m. EDT



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

Drought Impact Types:
 A = Agriculture
 W = Water (Hydrological)
 F = Fire danger (Wildfires)
 — Delineates dominant impacts
 (No type = All 3 impacts)

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, July 18, 2002

Author: Brad Rippey, USDA

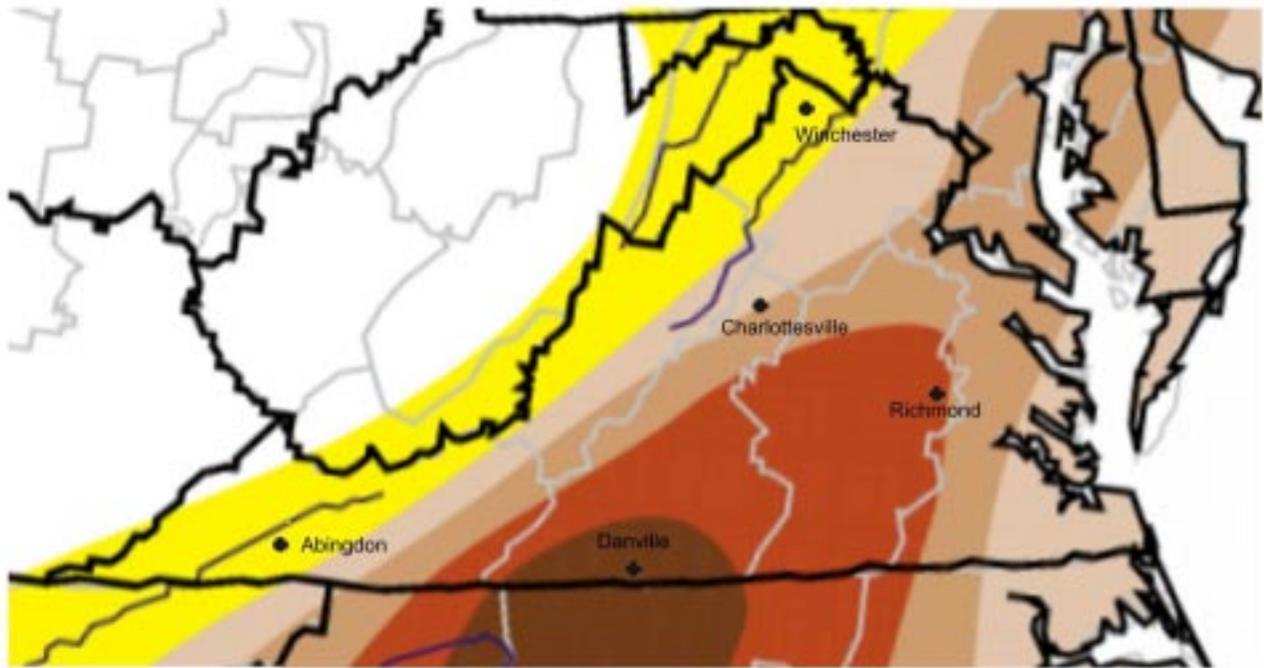
National Drought Summary – July 16, 2002

The Northeast and Southeast: Beneficial rain fell as far north as the Mason-Dixon Line, but only light, scattered showers were noted from Pennsylvania northward. As a result of recent drying, there was some expansion of moderate drought (D1) into southern New England and severe drought (D2) into southern New Jersey. In addition, effects of dryness in the northern Mid-Atlantic region expanded beyond the previously delineated hydrological (W) impacts to include agricultural and wildfire concerns. Farther south, rain in the southern Atlantic coastal plain and piedmont regions temporarily boosted topsoil moisture but otherwise provided little relief from long-term drought. More significant rain fell in the central and southern Appalachians and points westward, easing agricultural and wildfire concerns. Some agricultural dryness (D0) persisted in the Delta and environs, despite locally heavy showers.

APPENDIX B

U.S. DROUGHT MONITOR - VIRGINIA

July 16, 2002



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

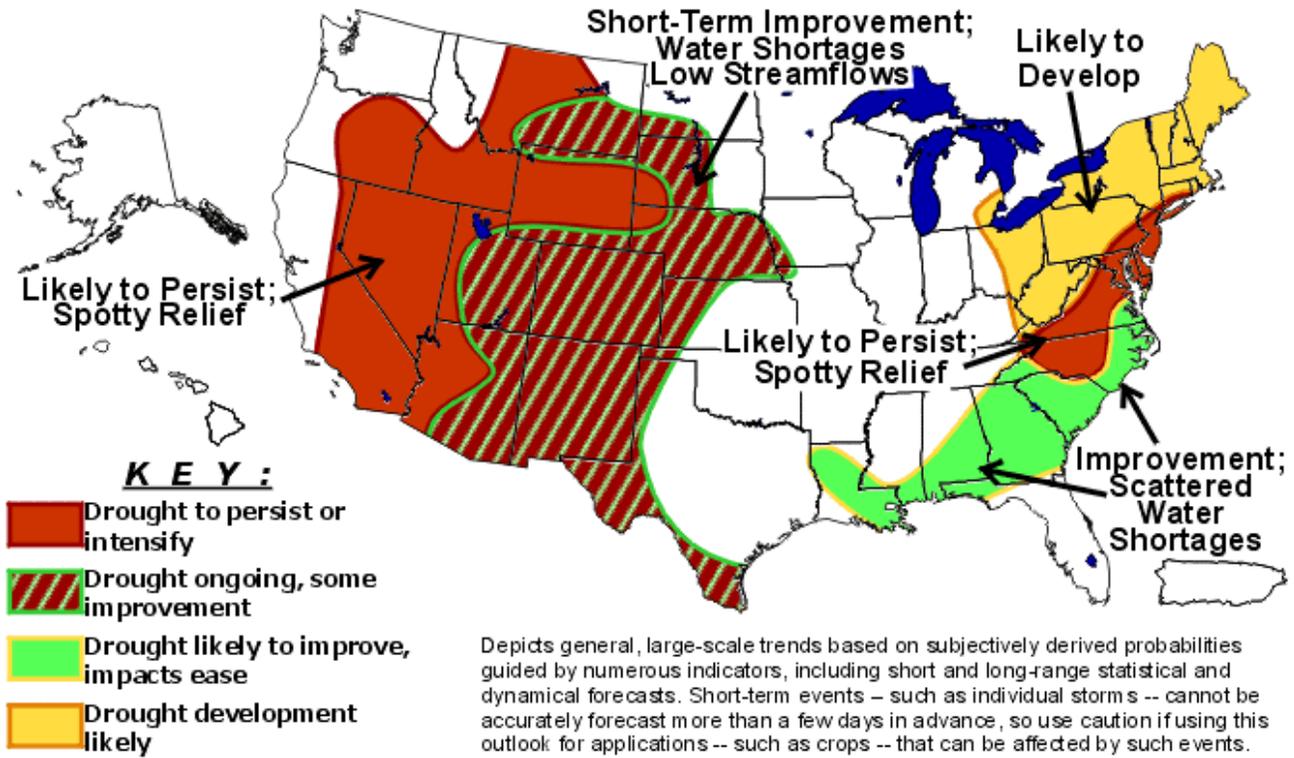
<http://drought.unl.edu/dm>



APPENDIX C



U. S. Seasonal Drought Outlook Through October 2002 Released July 18, 2002



Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including 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, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are schematically approximated from the Drought Monitor. For weekly drought updates, see the latest Drought Monitor map and text.

Latest Seasonal Assessment - In the East, the latest official CPC forecast for August-October shows slightly increased odds for below-normal rainfall from the Appalachians northward to New England. As a result, despite expected near-term relief in the Appalachians and mid-Atlantic, drought conditions are likely to persist into October. Consistent with recent trends and rainfall forecasts, drought is anticipated to develop north and west of the coastal mid-Atlantic region, including over New England, the eastern Ohio Valley, and southeastern Michigan. Improvement is expected for southeastern coastal areas, the interior South, and the southern Appalachians, although water shortages are likely to continue.

APPENDIX D

Half, one, two, three, six, twelve, twenty four, and thirty six month
precipitation departures by Climatological Division.

Half Month Precipitation Departures

Climatological Division	JULY 1-15 2002	JULY 1-15 NORMAL	JULY 1-15 DEPARTURE	JULY 1-15 % DEPARTURE
Tidewater	2.50	2.43	0.07	103%
Eastern Piedmont	1.10	2.25	-1.15	49%
Western Piedmont	1.40	2.24	-0.84	62%
Northern	2.40	1.97	0.43	122%
Central Mountain	2.40	1.95	0.45	123%
Southwestern	2.60	2.20	0.40	118%
Statewide	2.00	2.20	-0.20	91%

One Month Precipitation Departures

Climatological Division	JUNE 2002	JUNE NORMAL	JUNE DEPARTURE	JUNE % DEPARTURE
Tidewater	4.30	3.80	0.50	113%
Eastern Piedmont	1.20	3.91	-2.71	31%
Western Piedmont	1.40	4.14	-2.74	34%
Northern	3.40	3.95	-0.55	86%
Central Mountain	1.70	3.86	-2.16	44%
Southwestern	3.00	4.04	-1.04	74%
Statewide	2.50	3.95	-1.45	63%

Two Month Precipitation Departures

Climatological Division	MAY-JUNE 2002	MAY-JUNE NORMAL	MAY-JUNE DEPARTURE	MAY-JUNE % DEPARTURE
Tidewater	7.20	7.39	-0.19	97%
Eastern Piedmont	4.50	7.59	-3.09	59%
Western Piedmont	5.50	8.11	-2.61	68%
Northern	7.30	7.81	-0.51	93%
Central Mountain	4.40	7.59	-3.19	58%
Southwestern	7.20	8.10	-0.90	89%
Statewide	6.00	7.77	-1.77	77%

Three Month Precipitation Departures

Climatological Division	APRIL-JUNE 2002	APRIL-JUNE NORMAL	APRIL-JUNE DEPARTURE	APRIL-JUNE % DEPARTURE
Tidewater	10.30	10.48	-0.18	98%
Eastern Piedmont	6.70	10.86	-4.16	62%
Western Piedmont	7.50	11.67	-4.17	64%
Northern	11.40	11.03	0.37	103%
Central Mountain	8.40	10.64	-2.24	79%
Southwestern	9.80	11.66	-1.86	84%
Statewide	8.90	11.08	-2.18	80%

Six Month Precipitation Departures

Climatological Division	JAN 2001 - JUNE 2002	JANUARY-JUNE NORMAL	JANUARY-JUNE DEPARTURE	JANUARY-JUNE % DEPARTURE
Tidewater	18.90	20.99	-2.09	90%
Eastern Piedmont	14.74	21.30	-6.56	69%
Western Piedmont	15.54	22.30	-6.76	70%
Northern	16.81	19.91	-3.10	84%
Central Mountain	14.43	19.73	-5.30	73%
Southwestern	20.47	22.51	-2.04	91%
Statewide	16.70	21.27	-4.57	79%

Twelve Month Precipitation Departures

Climatological Division	JULY 2001 - JUNE 2002	1 - YEAR NORMAL	1 - YEAR DEPARTURE	1 - YEAR % DEPARTURE
Tidewater	33.88	43.64	-9.76	78%
Eastern Piedmont	27.54	42.97	-15.43	64%
Western Piedmont	29.20	44.44	-15.24	66%
Northern	32.23	40.53	-8.30	80%
Central Mountain	28.85	39.49	-10.64	73%
Southwestern	37.98	43.02	-5.04	88%
Statewide	31.57	42.59	-11.02	74%

Twenty Four Month Precipitation Departures

Climatological Division	JULY 2000 - JUNE 2002	2 - YEAR NORMAL	2 - YEAR DEPARTURE	2 - YEAR % DEPART.
Tidewater	76.32	87.27	-10.95	87%
Eastern Piedmont	64.55	85.93	-21.38	75%
Western Piedmont	66.04	88.87	-22.83	74%
Northern	69.73	81.06	-11.33	86%
Central Mountain	65.26	78.97	-13.71	83%
Southwestern	77.26	86.05	-8.79	90%
Statewide	69.97	85.17	-15.20	82%

Thirty Six Month Precipitation Departures

CD	JULY 1999 - JUNE 2002	3 - YEAR NORMAL	3 - YEAR DEPARTURE	3 - YEAR % DEPARTURE
Tidewater	135.23	130.90	4.33	103%
Eastern Piedmont	114.48	128.89	-14.41	89%
Western Piedmont	113.23	133.30	-20.07	85%
Northern	113.02	121.59	-8.57	93%
Central Mountain	106.30	118.45	-12.15	90%
Southwestern	114.76	129.08	-14.32	89%
Statewide	116.74	127.75	-11.01	91%

APPENDIX E

Flow duration and current flow conditions for selected U.S. Geological Survey and Virginia Department of Environmental Quality surface-water gaging stations

	MINIMUM DAILY FLOW, PERIOD OF RECORD (CFS)	MINIMUM JULY FLOW, PERIOD OF RECORD (CFS)	7Q2 (CFS)	7Q10 (CFS)	PERCENT OF TIME FLOW EQUALED OR EXCEEDED FOR JULY DAILY MEAN FLOWS (CUBIC FEET PER SECOND)			CURRENT CONDITIONS FLOW (CFS)/ DURATION (PERCENT)
					75%	50%	25%	
								July 12, 2002
<u>SHENANDOAH RIVER BASIN</u>								
South River near Waynesboro, Va.	17	19	30	24	40	50	62	-/-
South Fork Shenandoah River at Front Royal, Va.	107	176	344	235	480	630	851	350/90
North Fork Shenandoah River at Cootes Store, Va.	0.2	0.55	3.2	0.77	9	18	42	-/-
North Fork Shenandoah River near Strasburg, Va.	35	50	-	-	138	195	296	135/75
<u>POTOMAC RIVER BASIN</u>								
Goose Creek near Leesburg, Va.	0.4	1.7	12	2.5	31	65	132	18/85
<u>RAPPAHANNOCK RIVER BASIN</u>								
Rappahannock River at Remington, Va.	2.9	8.4	50	11	102	205	362	20/>95
Rapidan River near Culpeper, Va.	2.2	20	-	-	111	188	317	22/>95
<u>YORK RIVER BASIN</u>								
Pamunkey River near Hanover, Va.*	47	44	-	-	140	242	447	26/>95
Mattaponi River near Beulahville, Va.	.78	4.7	48	14	73	145	280	0.6/>95

	MINIMUM DAILY FLOW, PERIOD OF RECORD (CFS)	MINIMUM JULY FLOW, PERIOD OF RECORD (CFS)	7Q2 (CFS)	7Q10 (CFS)	PERCENT OF TIME FLOW EQUALED OR EXCEEDED FOR JULY DAILY MEAN FLOWS (CUBIC FEET PER SECOND)			CURRENT CONDITIONS FLOW (CFS)/ DURATION (PERCENT)
					75%	50%	25%	
								July 12, 2002
JAMES RIVER BASIN								
Jackson River near Bacova, Va.	13	15	26	20	38	48	69	30/90
Potts Creek near Covington, Va.	15	15	24	17	33	44	65	22/95
Cowpasture River near Clifton Forge, Va.	40	47	73	54	105	135	198	100/80
Craig Creek at Parr, Va.	25	27	43	31	56	78	124	32/>95
James River at Buchanan, Va.*	207	214	378	271	542	757	1,100	680/60
Maury River near Buena Vista, Va.	22	42	89	62	131	185	285	100/90
Hardware River below Briery Run near Scottsville, Va	0.1	2.4	24	7.5	30	53	81	0.5/>95
Rivanna River at Palmyra, Va.	5.2	15	-	-	135	244	404	25/>95
James River at Cartersville, Va.	330	412	1,120	584	1,800	2,700	4,110	850/>95
Appomattox River at Farmville, Va.	6.3	12	52	21	66	103	161	15/>95
Appomattox River at Mattoax, Va.	13	18	86	30	126	203	360	-/-
Chickahominy River near Providence Forge, Va.	0.07	0.82	16	4.0	24	58	145	0.2/>95
CHOWAN RIVER BASIN								
Nottoway River near Sebrell, Va.	14	21	82	24	135	250	640	30/>95
Blackwater River near Franklin, Va.	0.07	0.10	-	-	16	70	310	1.5/>95
Meherrin River near Lawrenceville, Va.	4.2	14	52	16	81	135	241	9/>95

	MINIMUM DAILY FLOW, PERIOD OF RECORD (CFS)	MINIMUM JULY FLOW, PERIOD OF RECORD (CFS)	7Q2 (CFS)	7Q10 (CFS)	PERCENT OF TIME FLOW EQUALED OR EXCEEDED FOR JULY DAILY MEAN FLOWS (CUBIC FEET PER SECOND)			CURRENT CONDITIONS FLOW (CFS)/ DURATION (PERCENT)
					75%	50%	25%	
								July 12, 2002
ROANOKE RIVER BASIN								
Roanoke River at Roanoke, Va.*	19	29	58	35	95	137	218	25/>95
Pigg River near Sandy Level, Va.	25	50	96	47	125	198	276	32/>95
Roanoke River at Randolph, Va.*	179	179	847	426	1,050	1,400	1,980	500/>95
Dan River at Paces, Va.	244	269	-	-	1,020	1,480	2,040	220/>95
Hyc0 River near Denniston, Va.*	1.5	1.5	-	-	22	34	64	6.5/>95
KANAWHA RIVER BASIN								
New River at Allisonia, Va.	453	535	1,040	725	1,450	1,910	2,580	1,000/95
Little River at Graysontown, Va.	47	51	109	69	159	220	302	100/90
Walker Creek at Bane, Va.	24	32	44	33	67	90	129	80/60
BIG SANDY RIVER BASIN								
Russell Fork at Haysi, Va.	0.2	0.9	8.7	1.0	32	65	145	40/70
TENNESSEE RIVER BASIN								
South Fork Holston River near Damascus, Va.	40	65	99	73	158	218	308	140/80
North Fork Holston River near Saltville, Va.	2.0	20	34	24	59	86	135	80/55
Clinch River at Cleveland, Va.	37	45	81	54	148	226	368	220/50
Powell River near Jonesville, Va.	18	28	42	24	88	139	246	75/80
* indicates some regulation								

APPENDIX F

Virginia Agriculture Statistic Services report of topsoil moisture, crop condition and crop progress.

TOPSOIL MOISTURE PERCENT				
Week Ending	Very Short	Short	Adequate	Surplus
July 14	31	39	30	0
July 7	27	46	27	0

CROP CONDITION PERCENT					
Crop	Very Poor	Poor	Fair	Good	Excellent
Pastures	25	37	26	11	1
Livestock	1	8	32	54	5
Other Hay	17	38	30	15	0
Alfalfa Hay	3	26	45	22	4
Corn for Grain	16	35	34	13	2
Soybeans	12	27	35	25	1
Tobacco, Flue-Cured	0	10	37	34	19
Tobacco, Burley	0	30	19	21	30
Tobacco, Dark Fire-Cured	0	15	45	33	7
Tobacco, Sun	0	25	11	64	0
Peanuts	0	7	30	60	3
Cotton	0	15	39	44	2
Summer Potatoes	5	10	15	35	5
Apples	2	6	48	44	0
Peaches	23	13	35	29	0

CROP PROGRESS PERCENT – WITH COMPARISONS				
Crop	This Week	Last Week	Last Year	5 Year Average
Corn Silked	66	44	45	40
Corn Dough	27	10	18	8
Corn Dent	4	NA	NA	NA
Soybeans Emerged	94	87	90	68
Soybeans Blooming	13	6	7	5
Winter Wheat Harvested	99	94	94	88
Peanuts Pegged	55	40	50	50
Cotton Squaring	96	81	94	88
Cotton Setting Bolls	40	5	17	11
Summer Potatoes Harvested	75	62	56	48
Summer Apples Harvested	2	NA	NA	5
Peaches Harvested	5	NA	NA	5

APPENDIX G

Virginia Department of Health Field Office Reports for Public Water Systems

(Note: The first digit in the PWSID number indicates the field office location of the waterworks. PWSID 2770650 is located in the Lexington Field Office, etc.)

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
2003250	Albemarle County / Crozet	Beaver Creek Reservoir	N	W: Beaver Creek Reservoir is currently down 3.9 feet from normal "full". The previous all time low water level on record (Feb. 2002) was 8 feet below normal "full".
2003600	Charlottesville/Albemarle County	Sugar Hollow and Ragged Mountain Reservoirs (Observatory WTP)	N	W: The Sugar Hollow reservoir (Observatory WTP) is 0.3 feet below overflow. Ragged Mountain reservoir is 4.2 feet below normal. Overall, source water availability is at 90.8% of "full available capacity" (this includes both the South Rivanna system and the Sugar Hollow/Ragged Mountain system).
2003725	Charlottesville/Albemarle County	South Rivanna (South Rivanna WTP)	V	W: Their main reservoir-South Rivanna (South Rivanna WTP) is 0.7 feet below full. Overall, source water availability is at 90.8% of "full available capacity" (this includes both the South Rivanna system and the Sugar Hollow/Ragged Mountain system).
2015150	Craigsville		M	S: Craigsville spring production off-well production off-construction nearing completion of interconnecting water line with Augusta Springs.
2015200	Deerfield-Augusta County Service Authority	Deerfield Spring	V	W: The Deerfield Spring is drying up and has been reduced to a small pool in the reservoir. The new suction intake is not adequately located to maximize water collection and is being adjusted. The reservoir housing leaks and the owner (USFS) has denied requests for previous repairs that would allow for the capture and retaining of additional waters. The service authority has been directed to look for a supplemental well site.
2015575	South River S.D.- Augusta County Service Authority	Coles Run	N	S: Coles Run reservoir level down 5-6 feet-no impact on system due to multiple sources.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
2017300	Millboro	Millboro Spring	N	S: Recent rains have improved spring flows. Several large leaks have also been found and repaired.
2023730	Dal-Nita Hills	One Drilled Well	V	W: System serves 35 connections. Well production has dropped off to approximately 5 to 7 gpm. Owner has asked customers to conserve. New well site was approved. Owner is hauling water from Greenfield system in Botetourt County to fill storage tank as needed. Owner will drill a new well.
2043250	Boyce-Millwood	Prospect Hill Spring	V	S: Spring yield is down from normal historical levels. Voluntary measures instituted to reduce water demand. Grouting of the outside area around the spring enclosure has stopped some of the water loss. Development of additional water sources is being investigated.
2065250	Fluvanna Correctional Center	Mechunk Creek	V	W: The raw water impoundment is approximately 70% full (28-MGD available, 40-MG full capacity) and dropping. The facility is using approximately 170,000 gpd of finished water and is currently unable to pump raw water from Mechunk Creek (the creek is dry at the intake location). There is approximately a 90-day supply of raw water remaining in the reservoir.
2065300	Fork Union Sanitary District	Drilled Wells	V	W: The FUSD waterworks source water is obtained from 6 drilled wells. They are currently operating at approximately 45% of normal available production. Available production is equal to or slightly below the daily demand.
2065520	Oakland School	Drilled Wells	N	W: The Oakland School waterworks provides water to approximately 150 students and staff. Well production has been steadily dropping over the summer and additional source capacity is needed before arrival of the fall students. Well sites have been evaluated and drilling will begin as soon as possible.
2091150	Monterey		N	S: Monterey well production off. New well was constructed. Well is in operation. Situation is improving.
2109800	Trevilians Square Apartments	Drilled Well	V	W: The Trevilians Square Apartments provides water to 28 single-family units in Louisa County. Water production in a single drilled well is unable to

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
				meet daily demand. The submersible well pump has been lowered in the well in an effort to increase production; however, an additional well may have to be drilled.
2125650	Nelson County Service Authority - Schuyler	Johnson's Branch	N	S: The NCSA - Schuyler waterworks source water is obtained from Johnson's Branch. The flow is currently approximately 20 gpm (normal treatment capacity is 70 to 90 gpm). Withdrawal from Rockfish River has been initiated to supplement the flow from Johnson's Branch. They are currently meeting the normal daily demand with water from the Rockfish River.
2165765	Valley View MHP	Two drilled wells	N	W: The water system serving the park is starting to experience drought related shortages, but is not yet severe. A new waterline project that extends water service near this PWS has been recently completed and the water system is making the necessary arrangements with Rockingham County to connect to their new waterline. After this the MHP PWS will be inactive and will not be in a drought-related problem.
2171250	Stoney Creek Sanitary District		N	S: Well yield is off. Authority has reduced pumping capacity by 40% based on lower water table levels. Process of developing new 350 gpm well and water treatment plant.
2187406	Front Royal		V	W: It is anticipated voluntary restrictions will be instituted again as it appears that the running 14-day average will be below 30% (11 of 14 days in calculation). This is in accordance with VWPP requirements. Conservation controls implemented at 30% (voluntary), 17% (mandatory), 15% (emergency), and 13% (rationing) of mean stream flow based on 14-day running average.
2187522	High Knob Subdivision	Springs and wells	N	W: Spring yields have dropped significantly and wells are being increasingly relied upon to meet water demand.
2770650	Roanoke City - Carvins Cove	Carvins Cove Reservoir/Tinker Creek/Catawba Creek	M	W: Reservoir level 28.2 feet below spillway - situation steadily worsening (32% of supply remaining). Mandatory restrictions imposed when reservoir level is between 26 and 30 feet below spillway.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
				(Suspension of all outdoor water uses with certain exceptions; cutting back on reservoir use by water purchases from Roanoke County (3-4 MGD) and the City of Salem (1.1 MGD); imposition of civil penalties and surcharge applied to base water rates). Suspension means no outside use of potable water for washing your own car, watering lawns and gardens and filling pools, etc. (Stage 4)
2790600	Staunton		N	S: Staunton-Middle River flow reduced.
3095490	James City Service Authority Central System		V	S: No significant impact on water levels in wells. Conservation due to high water demands.
3550050	Chesapeake - Western Branch system	Western Branch system	M	W: This portion of the city is consecutive to (receives water from) the city of Portsmouth. Because Portsmouth decided to go on mandatory restrictions, Chesapeake has decided to follow Portsmouth's lead, for ALL residents of the city. City Council voted to establish Mandatory Conservation at the meeting on 07/10/02. The restrictions took effect immediately.
3550051	Chesapeake - NW River system	NW River system	M	W: As of 7/15, chlorides levels in the Northwest River are average (155 mg/L) and well water levels have reduced to 95 %. The level has not changed since the last report. Plant production has been high and the ASR facility has been in use more than usual. Because a portion of the city (a separate system from the NW River system) is served from Portsmouth, Chesapeake has decided to follow Portsmouth's lead, for ALL residents of the city. City Council voted to establish Mandatory Conservation at the meeting on 07/10/02. The restrictions took effect on immediately.
3550052	Chesapeake - South Norfolk system	South Norfolk system	M	W: This portion of the city is consecutive to (receives water from) the city of Norfolk. Because Portsmouth decided to go on voluntary restrictions, Chesapeake has decided to follow Portsmouth's lead, for ALL residents of the city. City Council voted to establish Mandatory Conservation at the meeting on 07/10/02. The restrictions took effect immediately.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
3650150	Ft. Monroe	Big Bethel Reservoir System	N	S: The water plant came back on line on 7/1/02. The reservoir is currently 9 inches below spillway.
3670800	Virginia-American, Hopewell	Appomattox River/James River	N	S: No problems with water quantity. Operator reports slight increase in Mn in raw water. Water quality is still fluctuating with changes in the tide. VAWC may ask for voluntary restrictions at Fort Lee due to observed water wastage.
3700500	Newport News	Little Creek, Diascund, Skiffes Creek, Harwoods Mill and Lee Hall Reservoirs	N	W: As of 7/12/02, the reservoirs were 77 % full (in the previous report, the reservoirs were 87 % full). The RO plant has increased production to 3.5 MGD. No voluntary or mandatory conservation measures in effect at this time.
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	N	W: As of 07/08, reservoirs are at 82.1% of total capacity (decrease from 84.6% on 06/24). Historic reservoir capacity at this time of year is 89.3%. Avg. pumping from Lake Gaston = 34.1 MGD; Blackwater River = 0 MGD (pump off 04/09); Nottoway River = 21.7 MGD (pump on 06/24). Deep wells = 16 MGD (pumps on since 06/21). Not currently considering conservation measures, but that could change with continued dry weather.
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	M	W: As of 07/08, reservoirs are at 63% of useful capacity. This is an 8 % drop since 06/28. Both emergency wells are ON, pumping an average of 4.6 MGD, but levels continue to drop. City Council voted to establish Mandatory Conservation (Condition II) at meeting of 07/09/02.
3800787	City of Suffolk	Route 17 Corridor	V	S: This system is consecutive to (purchases water from) the Portsmouth system. As such, this system has followed the lead of the Portsmouth system, and has adopted Voluntary Conservation. If Portsmouth goes to Mandatory Conservation, Suffolk will probably switch the supply source to their Central System (groundwater).
3800805	City of Suffolk	Central System	V	B: As of 7/15, reservoir system is 71.4% full in Crumps Mill. This is a 62.2% increase from the last report. Lone Star Lakes is at 77.65% full a 15.35 % decrease. Lone Star makes up the majority

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
				of the Northern Lakes. The Southern Lakes were at 55.5%. This is a 5.5% increase from the last report. The surface water treatment plant and the EDR are both operational at this time. The city also purchases finished water from Portsmouth, which enters the central system in downtown Suffolk. As such, this system has followed the lead of the Portsmouth system and has adopted Voluntary Conservation. Suffolk will rescind Voluntary Conservation following Portsmouth's lead but not until the EDR is at full capacity. A decision concerning mandatory conservation is forthcoming.
3830850	Williamsburg	Waller Mill Reservoir	V	W: As of 7/12/02, Waller Mill reservoir is 21 inches below the primary spillway (in the previous report it was 16 inches below the primary spillway). Voluntary conservation measures are in effect as of March 30, 2002.
4041035	Appomattox River Water Authority	Lake Chesdin	N	W: The water level is 24 inches below the top of the dam. Two weeks ago, the level was 14 inches below the top of the dam. Only about 40 cfs of water is flowing into the reservoir.
4041845	Swift Creek WTP (Chesterfield County)	Swift Creek Reservoir	V	W: The reservoir level is 175 feet. The level is 0.4 feet lower than it was 2 weeks ago and 2 feet below the top of the dam. Chesterfield County continues to encourage voluntary water conservation.
4073311	Gloucester	Beaverdam Reservoir	N	W: The Beaverdam Reservoir water overflow elevation is 40.5. The reservoir is not overflowing. The water level was 40.02 on June 24, 2002 and 40.06 on June 21, 2002. The reservoir level is falling. Note that about a 1 MGD of water is allowed to flow through the reservoir every day.
4075630	Pagebrook (Goochland)	Groundwater	N	S: Sydnor continues to haul water weekly - 1 tanker load/week (2500 gallons).
4075735	James River Correctional Center	Beaverdam Creek and the James River	N	W: The primary source of water (Beaverdam Creek) has temporarily gone dry, and the water level in the James River is 4 inches below the top of the bridge intake (secondary intake), rendering that intake unusable. The water plant is currently alternating between a skid-mounted pump sitting on the riverbank beside the bridge and a

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
				trailer-mounted diesel powered pump sitting on the riverbank near the confluence of Beaverdam Creek and the James River. Both pumps have flexible hoses extending into the river. The raw water line for the newer pump discharges into Beaverdam Creek about 100 yards upstream of the check dam on Beaverdam Creek.
4760100	City of Richmond	James River	V	W: The current flow in the James River flows is very low and dropping. Flow rates are near or at record lows; currently 619 cfs per USGS stream gaging station. Richmond is having no problems with water withdrawals. The draft conservation plan calls for mandatory conservation when the 14-day running average is < 750 cfs for 7 consecutive days. Currently the 14-day running average is 800 cfs. Although this plan has not been codified, it is likely that Richmond will act as if it is.
4-all County owned systems	Hanover County	North Anna River , wells, and purchased water from the City of Richmond	V	S: Letters mailed to customers with conservation tips. In addition, general unidirectional flushing program has been discontinued.
5007030	Amelia Academy	Well No.1(bored)	N	W: Existing well is very low.
5009050	Town of Amherst	Buffalo River	M	W: River level continues to decrease, Town has arranged for the release of water from upstream reservoirs and instituted mandatory conservation.
5009250	Amherst County Service Authority	Graham Creek Res., Harris Creek	V	W: Drawing 88% from reservoir and 12% from creek - reservoir is about 21" down. Started voluntary water restrictions June 26, 2002.
5011050	Town of Appomattox	Wells	M	Well levels are dropping.
5019250	Eagle Eyrie	Unnamed Reservoir	N	W: About 6 feet down. Using second intake.
5019400	High Point Subdivision	Smith Mountain Lake	N	W: Smith Mountain Lake is 3.7 feet below full pond.
5025450	Town of Lawrenceville	Great Creek	N	S: Great Creek Reservoir is below normal.
5029085	Buckingham County Waterworks	Troublesome Creek Reservoir	N	W: Reservoir is 11 inches below spillway.
5031050	Town of Altavista	Staunton River, Reed Creek	N	W: River is low, but OK. Creek is too low to draw from right now and the two springs have lost some capacity.
5031150	CCUSA	Otter River	N	W: River is 31 inches down.
5031175	Town of Brookneal	Phelps Creek Reservoir	N	W: Reservoir still has overflow, approximately 1 inch over spillway.
5031200	Dan River, Inc. - Brookneal Plant	Falling River	N	S: River has slight overflow, same as last report.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
5037300	Town of Keysville	Spring Creek Impoundment	N	S: Reservoir is down approximately 8-inch, currently no plans for conservation.
5067840	Town of Rocky Mount	Blackwater Creek	N	W: Flow in the river continues to drop, still an overflow over the check dam but only by putting flow restricting plate in the dam bypass, the town is considering asking for voluntary conservation.
5089487	Marrowbone Cr. WTP	Marrowbone Creek	V	W: On morning of 7/9/02, no flow over check dam. It was 5/16 inch on 7/8/02. The rate through WTP was to be reduced from 0.78 MGD to 0.7 MGD to try to establish flow over check dam. Voluntary conservation measures in place and using interconnections with City of Martinsville to supplement system.
5111450	Town of Kenbridge	Flat Rock Creek & reservoir	N	W: Flat rock creek is low, must pump intermittently to the Reservoir.
5117800	Town of South Hill	Meherrin River	N	W: Stream flow is very low. In the interim, bacti samples will be taken from the well sources at the Towns of La Crosse and Broadnax, should it become necessary for these well sources to be reconnected to South Hill. Town officials met on 7/10/02 and discussed voluntary and mandatory measures to reduce demand. Town is considering water restrictions.
5135110	Town of Burkeville	7 wells	V	W: One well has lost production. Others are showing signs of stress.
5135160	Town of Crewe	Lazerretto Creek/Crystal Lake	N	W: Reservoir is 15 inches below spillway.
5143114	Town of Chatham	Cherrystone Creek	N	W- No flow over dam at upstream reservoir. To compensate, plant reducing operating time from normal 8.5-9 hours to 7 hour stretches with 3-hour rest periods; also extending filter run times to reduce water used for backwashing.
5143210	Town of Gretna	Georges Creek Reservoir	V	W: As of 7/4/02, impoundment down 9 inches, which is lowest in operator's 27 years with town; town initiated voluntary conservation measures beginning 7/9/02.
5515050	City of Bedford	Stoney Creek Reservoir	N	W: Reservoir is 4.5 inches down. City is drawing from wells and river (about 0.25 mgd of 1.6 mgd total) to try to maintain reservoir level.
5590100	City of Danville	Dan River, Schofield Dam	N	B: At 5:30 PM, 7/09/02 water was observed overflowing

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
				spillway. City is having no problems meeting their average demand of 7.0 mgd.
5680200	City of Lynchburg	Pedlar Reservoir	N	W: Pedlar Reservoir is down 103 inches. City began drawing 50% of water from James River on 7/09 and will use river as necessary to prevent reservoir from dropping below 160 inches.
5690400	City of Martinsville	Beaver Creek Reservoir	N	W: Reservoir at approx. 5.9 feet below spillway. In order to help reduce loss in reservoir (approx. 0.1 inches every two days), the City has initiated use of Leatherwood source along with reservoir.
5780600	Town of South Boston	Dan River	N	W: Dan River is about 3 to 5 inches below normal.
6033100	Campbell's Creek Subd.	Groundwater (3 wells)	M	W: Hauling water (approx. 10,000 gpd) from Caroline County system. New well sites approved in Mar 2002. Considering waterline extension from county system.
6033425	Lake Caroline	Lake Caroline	M	S: Lake Caroline is 9 inches below normal level. Conservation measures in place.
6047500	Town of Culpeper	Lake Pelham	N	S: No problems at this time. Reservoir is overflowing.
6059500	FCWA-Lorton/Occoquan WTPs	Occoquan Reservoir	N	W: Reservoir 89% full, 7.11 billion gallons usable storage. All of FCWA service area is on "watch" status.
6059501	FCWA-Corbalis WTP	Potomac River	N	W: Jennings Randolph and Little Seneca reservoirs on the Potomac River were both 99% full on 7/12/02. Flow In Potomac River at Little Falls (downstream of the Washington DC intakes) on 7/10/02 was 314 mgd. Water release from Little Seneca Reservoir in Maryland started on 7/12/02 at 25 mgd. Water release from Jennings Randolph Reservoir started on 7/13/02 at 250 mgd. Releases from both reservoirs stopped on 7/14/02 due to significant rainfall in the Potomac River Basin. All of FCWA service area is on "watch" status. Voluntary conservation will be instituted when the upstream reservoirs drop below 60% full. No releases were made from the reservoirs in 2000 or 2001, but 3.1 billion gallons were released in the summer of 1999. Reservoir storage is adequate to meet the water supply needs in the event the 1930-31 drought of record were to re-occur.

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
6061600	Town of Warrenton	Warrenton Reservoir	N	S: No problems at this time. Reservoir is near overflow.
6061665	Waterloo Estates	Groundwater (5 wells)	N	S: Decrease in well production led to a request for residents to voluntarily conserve water beginning 3/26/02. Well pump has been throttled back to allow pump to run longer thereby increasing production and lifting of voluntary restrictions on 6/15/2002.
6107150	Hamilton	GW	V	S: Groundwater levels and system demands currently stable. In process to add additional well.
6107200	Town of Hillsboro	GWUDISW (Spring)	V	W: Spring flow has declined to approx. 5 gpm. New well site approved several months ago and well drilled July 6-8, 2002, using DWSRF planning grant money; yield approx. 8 gpm. CFO has promised to work with town to get well connected ASAP.
6107300	Leesburg	Potomac River	V	S: Current river level at 184.7 feet. Normal level is 187.50 feet. Leesburg intake is located upstream of the FCWA and Washington DC intakes. Signs requesting voluntary conservation have been placed around town and on town website.
6107400	Lovettsville	GW	V	S: Groundwater levels and system demands currently stable. Voluntary conservation in effect.
6107600	Purcellville	Hirst Reservoirs	N	W: Front reservoir 0.4 feet below full; back reservoir 1.65 feet below full. Drought "watch" status still in effect.
6113200	Town of Madison	White Oak Run	N	W: Stream flow is below normal, but adverse impact on water treatment plant to this point.
6137500	Town of Orange	Rapidan River	N	W: Stream flow is below normal, but no impact on water treatment plant to this point.
6137500	Wilderness WTP	Rapidan River	N	W: Stream flow is below normal and continues to drop. Level being monitored daily. No impact on water treatment plant to this point.
6153675	Quantico- Mainside	Lunga Reservoir/ Breckenridge reservoir	N	W: Water Level Status: Lunga 4 inches below overflow; Breckenridge 20 inches below overflow.
6177280, 6177300	Spotsylvania County	Ni River Reservoir and Motts Run/Rappahannock River	M	W: Spotsylvania County declared a water emergency in mid November and instituted mandatory conservation (vehicle washing at homes not allowed). Ni River Reservoir is 3.15 feet below normal. Motts Run Reservoir is 1.8 feet below normal level. Flow in Rappahannock River is at < 10%

PWSID 1-Abingdon 2-Lexington 3-Southeast VA 4-East Central 5-Danville 6-Culpeper	Waterworks	Source Name	Restrictions N-No M-Mandatory V-Voluntary	Situation B-Better, S-Same, W-Worse
				mean annual flow.
6179100, 6179775	Stafford County	Smith Lake and Abel Lake	V	W: Stafford County has asked residents to voluntarily conserve water. Smith Lake is 1.7 feet below normal and Abel Lake is 2.25 feet below normal.
6600100	City of Fairfax	Goose Creek/Beaver Dam	N	S: Water Level Status: Goose Creek Reservoir is 1 inch below overflow. Beaver Dam Reservoir is full.
6630050	City of Fredericksburg	Motts Run/Rappahannock River	M	W: City of Fredericksburg (consecutive system to Spotsylvania County) has asked for mandatory conservation based on Spotsylvania County's action.
6685100	City of Manassas	Lake Manassas (Broad Run)	N	S: Current Water Level Status: 289.08 feet; Max is 290 feet.