DROUGHT MONITORING TASK FORCE

Drought Status Report
June 19, 2006

During the most recent evaluation period, June 1 through June 15, the Shenandoah, Northern Virginia, and Northern Piedmont drought evaluation regions experienced lower than normal precipitation while the remainder of the Commonwealth experienced normal to above normal precipitation. The eastern half of the Commonwealth experienced significantly higher than normal precipitation due primarily to the passage of the remains of Tropical Storm Alberto on June 14. While statewide precipitation for the current water year (beginning October 1, 2005) is in the normal range, statewide precipitation since January 1, 2006 is only 68% of normal. 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 precipitation and temperatures through July of 2006. The long-range seasonal outlook calls for equal chances of below average, average, and above average temperatures through September 2006. The seasonal outlook calls for equal chances of below average, average, and above average precipitation for the western third of the Commonwealth and above average precipitation for the eastern two thirds of the Commonwealth through September 2006.

The latest NOAA drought monitor indicates the occurrence of moderate drought conditions throughout the majority of the piedmont physiographic region of the Commonwealth and is included as Appendix B. Appendix C contains information from the national drought monitor with only Virginia displayed. It is important to note that these drought depictions do not include the impacts of the significant precipitation event of June 14 and it is likely that the area of moderate drought will be reduced with the next release of the drought monitor on June 22. The NOAA seasonal drought outlook through August 2006 shows the potential for drought impacts to diminish in all areas currently identified as being impacted by drought in Virginia. The seasonal drought outlook is included as Appendix D.

Seven day average streamflows in the Shenandoah Valley, Northern Virginia, and Northern Piedmont portions of the Commonwealth indicate moderate hydrologic drought conditions (6^{th} to 9^{th} percentile flows) while the majority of the remainder of the Commonwealth is experiencing below normal streamflows (10^{th} to 24^{th} percentile flows) when compared to average flows for June 18. It should be noted that streamflows have reacted very quickly to precipitation events of June 12 and June 14. Streamflows will likely decline rapidly without periodic precipitation and this decline will be compounded by the effects of evapotranspiration demands of actively growing vegetation. Ground water levels are below normal in 13 of the 19 real-time drought monitoring wells across the Commonwealth and the remaining 6 wells are in the lower portion of the normal range. Ground water levels are generally below normal levels in the area of the Commonwealth west of Route 95and four drought monitoring wells in this area exhibit water levels in the lowest 10% of historic water levels for mid-June. Levels of large reservoirs such as Lake Moomaw, Smith Mountain Lake, Kerr Reservoir, and Philpott Reservoir are declining due to low inflows.

While the Virginia Department of Health has not reported any impacts to public water supplies, recent press reports indicate that the Rivanna Water and Sewage Authority is considering the declaration of a drought watch for their service area.

The Department of Game and Inland Fisheries has not reported any impacts to public boat ramps or DGIF lakes.

While recent precipitation has mitigated most short term drought impacts in most areas of Virginia continued vigilance is warranted. The general shortage of rainfall during January, February and March prevented long term storage of excess moisture in the deep soil horizon and also prevented significant ground water recharge. It is likely that below normal precipitation for relatively short durations will result in rapid onset of drought conditions.

Detailed reports from the State Climatologist and National Weather Service, the Virginia Department of Agriculture and Consumer Services and a report of major reservoir conditions from the Department of Environmental Quality follow.

Report of the State Climatologist with additional information from the National Weather Service

The remnants of Tropical Storm Alberto brought significant rainfall to much of the eastern two-thirds of Virginia during the past week, and raised the statewide average for the first half of June to slightly above normal. Rainfall from Alberto should significantly ease the short-term moisture concerns across the southeast third of the Commonwealth (roughly southeast of a line from South Hill to Richmond to Wallops Island line). Rainfall amounts exceeded 2 inches in much of this area, with some locations close to the coast receiving 4-6 inches. Unfortunately, much of this rainfall bypassed the Shenandoah, Northern Virginia and Northern Piedmont Drought Monitoring Regions. In all other regions (except New River, which remained almost unchanged), moisture deficits since the onset of spring continued to decrease significantly. Southeastern Virginia is now running slightly above normal for the last three and one-half month period.

Overall, the daytime high temperatures for the first half of June have been running significantly below normal across the state. This has continued to minimize the direct agricultural effects that might normally be associated with the longer-term precipitation deficit.

With the approach of summer, the combination of high solar angle and higher temperatures will lead to increased evapotranspiration, especially as crops mature and increase water usage. Unfortunately, the outlook for the next 2 weeks does not suggest any widespread rainfall threat at this time. Any precipitation that falls through the end of June is likely to come from scattered showers and thunderstorms, and not affect large portions of Virginia at any one time. This, combined with daytime temperatures that should average in the 85-93 degree range across much of the Commonwealth suggests that current moisture conditions are not likely to improve, and could well deteriorate between now and July 1. During this time of year it is usually quite difficult to make appreciable headway against the longer-term moisture deficits.

Nonetheless, the passage of Alberto's remnants is a reminder that tropical systems can be a significant source of summer rainfall anywhere in Virginia. With the current expectation of increased tropical activity in the North Atlantic this year, the probability of more input from this source is likely somewhat higher than average—but is far from certain.

Virginia Department of Agriculture and Consumer Services

Overview

During two the past weeks, many areas of the Commonwealth had good agricultural work weeks. Although some areas of the state have seen sporadic rainfall and some scattered thunderstorms, conditions still remain dry in most areas of the state. The effects of recent rainfall from Hurricane Alberto are not known at this time.

The National Agricultural Statistics Service (NASS) reports that over the past two weeks there were 12.0 suitable days for field work. The average temperature during the past week was 67.1 degrees, with average precipitation below normal.

Soil and Crop Conditions

Soil conditions and crop conditions are varied across the state. While some areas report that dry conditions have adversely affected newly emerged corn, other areas report that the corn crop looks good. Dry soil conditions in some areas hindered corn and tobacco growth, and slowed soybean planting. Tomato producers were busy tending to summer tomatoes and preparing fields for the fall crop. NASS reports that the potato crop looks good. Barley harvest is underway with reports of a promising yield. Some soybean stands have also suffered from the lack of moisture. Vegetables are looking better due to warm temperatures. Corn that was planted early (April in the western part of the state) is doing very well. Other farm activities this week including sidedressing corn, spraying herbicides, and harvesting vegetables are proceeding as planned.

Livestock producers are concerned about the lack of hay, and are preparing to buy supplemental feed in fear of an insufficient hay crop. Pastures have suffered from the lack of moisture, and the first cutting of hay remains short. Livestock is reported to be in good condition. Some beef producers are feeding hay to herds on depleted pastures while making arrangements to buy supplemental feed for the summer and fall. Winter wheat is drying out fast, thus an earlier-

than-normal harvest is anticipated. In the dry areas, the main impact on dairymen has been a reduced first cutting of hay and poor germination of corn that was planted late. Other farm activities this week included planting full season soybeans, harvesting strawberries, preparing to harvest small grains, and making hay.

Regional Impacts

Southside

Rainfall has been very spotty in the region, with some areas receiving little or no rain and other areas receiving generous amounts of rain. The tobacco crop, overall, would probably be classified as in fair to good condition currently, and still has excellent potential if the region gets some rain.

Growers are reluctant to start irrigating at this relatively early stage due to costs and availability of water supplies for the long haul. The crop that has been most severely stressed by the dry conditions is grass (hay and pasture). The yield for the spring hay crop was no more than half of normal. Pastures overall are very stressed with producers in some areas reportedly providing supplemental hay to livestock. There is hope that the remnants of Hurricane Alberto brought enough badly needed moisture.

Central/Northern Virginia

Some portions of this region have accumulated precipitation deficits that range from 7 to 11 inches below average annual rainfall. This is having a negative effect on the first hay cutting, which is estimated to be about 70% of normal. Mature fruit trees are not affected so far, but fruit size could be adversely impacted if the region does not get rain soon. Young trees without irrigation will be negatively impacted. Since July and August are normally the state's hottest periods, it is important that the region gets some rain prior to then to restore some of the ground water.

Southwest Virginia

Moisture is sporadic in the region. Some livestock producers are already buying hay to insure that they have sufficient supplies for the winter. Most farmers are reporting 50 to 80 percent hay crop.

- Vegetables are doing well although there is concern with the cool nights. Several growers either irrigate or have the ability to irrigate. Pumpkins are just now being planted.
- Some cattle growers are saying that they will begin supplemental feeding of cattle or selling before long because of the drought.
- Apples and peaches seemed to be doing well in most areas. Cherry crop is good and sales are brisk.
- Christmas trees and nursery stock are doing well so far.

Corn crop looks good and most areas report that the corn is beginning to sprout.

Eastern Shore

The region is still in a rain deficient situation; however rain events have been timely. With the cool weather, the moisture situation on the shore is adequate. A week of hot dry, weather, however, could change producer outlook markedly. Some parts of the region received significant rainfall from the remnants of the Hurricane Alberto, but its effects are not known at this time.

Impact of Continued Drought Conditions

Scattered rainfall in a hit-or-miss pattern gives relief to some and not much to others. Any continuous period of days of hot temperature with no rain will be critical to already moisture starved pastures. The rainfall received due to Hurricane Alberto will likely have a positive impact on the south eastern part of the state, but the effect is not known at this time.

Condition of Major Reservoirs

The recent passage of the remnants of tropical storm Alberto did little to improve the low inflows being experienced by the large regional reservoirs; Kerr, Smith Mountain Lake and Moomaw.

The operation of Kerr Reservoir is the subject of weekly conference calls. Currently the reservoir is at 299 feet above msl, about one foot below guide curve. Inflow is about equal to outflow averaging 2700 cfs. Minimum releases from Kerr are being made to produce the energy required to meet the contractual requirement that the South Eastern Power Administration has with several energy companies. These releases will increase in July. The hydroelectric energy releases dwarf the amount of water being taken by Virginia Beach from Lake Gaston and are sufficient alone to maintain water quality in the lower Roanoke River.

Lake Moomaw is currently at 1578 msl and has depleted 16 % of its conservation pool. Inflow is about 60 cfs and outflow is 276 cfs. The lake lost about 5 per cent of its conservation storage in the last week. However due to the high amount of conservation pool remaining, no action is contemplated in the short term to adjust planned releases.

Smith Mountain Lake is at 793.6 feet, 1.4 feet below full and falling. In the first half of June the lake has dropped 0.15 feet. Discussions between several organizations representing interests on the lake and stream interests below the lake were held the week of June 12 regarding a possible variance to the 650 cfs minimum release requirements. While the general consensus of the discussions was that it was too early in the season to initiate reductions in the releases, those representing the interests of residents of Smith Mountain Lake would like for such release reductions to begin as soon as possible. Appalachian Power has requested a variance beginning after the Fourth of July weekend reducing the minimum release from 650 cfs to 550 cfs to slow the rate of decline. This variance request includes the earlier initiation of reduced releases should the adjusted lake levels drop below 793 feet prior to July 5.

APPENDIX A

Precipitation departures by Drought Evaluation Region.

PRELIMINARY PRECIPITATION SUMMARY

Prepared: 6/16/06

	DROUGHT REGION	OBSERVED	JUN 1, 2006 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	2.69	2.21	0.48	122%
2	New River	1.77	2.05	-0.28	86%
3	Roanoke	2.22	2.07	0.15	107%
4	Upper James	1.94	1.98	-0.04	98%
5	Middle James	2.28	1.87	0.41	122%
6	Shenandoah	1.24	1.98	-0.73	63%
7	Northern Virginia	0.96	2.06	-1.10	47%
8	Northern Piedmont	1.31	2.14	-0.83	61%
9	Chowan	2.72	1.95	0.78	140%
10	Northern Coastal Plain	2.15	1.90	0.26	114%
11	York-James	2.37	1.82	0.55	131%
12	Southeast Virginia	6.17	1.92	4.25	321%
13	Eastern Shore	4.24	1.59	2.65	267%
	Statewide	2.22	2.02	0.20	110%

	DROUGHT REGION	OBSERVED	MAY 1, 2006 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	6.21	7.03	-0.82	88%
2	New River	4.31	6.26	-1.95	69%
3	Roanoke	4.29	6.41	-2.12	67%
4	Upper James	3.42	6.26	-2.84	55%
5	Middle James	4.67	6.11	-1.44	76%
6	Shenandoah	2.90	5.82	-2.92	50%
7	Northern Virginia	3.38	6.40	-3.02	53%
8	Northern Piedmont	3.73	6.36	-2.62	59%
9	Chowan	5.94	6.03	-0.09	99%
10	Northern Coastal Plain	5.16	6.06	-0.90	85%
11	York-James	5.81	6.09	-0.28	95%
12	Southeast Virginia	9.65	5.79	3.87	167%
13	Eastern Shore	6.74	5.10	1.64	132%
	Statewide	4.75	6.28	-1.53	76%

	DROUGHT REGION	OBSERVED	APR 1, 2006 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	12.58	10.79	1.79	117%
2	New River	8.17	9.81	-1.64	83%
3	Roanoke	7.16	10.21	-3.05	70%
4	Upper James	6.98	9.66	-2.68	72%
5	Middle James	7.53	9.45	-1.92	80%
6	Shenandoah	5.45	8.74	-3.29	62%
7	Northern Virginia	7.49	9.70	-2.21	77%
8	Northern Piedmont	7.71	9.64	-1.94	80%
9	Chowan	9.98	9.46	0.52	106%
10	Northern Coastal Plain	9.90	9.15	0.75	108%
11	York-James	9.43	9.38	0.05	100%
12	Southeast Virginia	13.45	9.03	4.42	149%
13	Eastern Shore	10.74	8.02	2.72	134%
	Statewide	8.53	9.70	-1.17	88%

	DROUGHT REGION	OBSERVED	MAR 1, 2006 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	14.81	15.04	-0.22	99%
2	New River	9.09	13.49	-4.39	67%
3	Roanoke	7.78	14.48	-6.70	54%
4	Upper James	7.84	13.45	-5.61	58%
5	Middle James	7.93	13.51	-5.58	59%
6	Shenandoah	5.85	11.94	-6.09	49%
7	Northern Virginia	7.95	13.36	-5.40	60%
8	Northern Piedmont	8.08	13.45	-5.37	60%
9	Chowan	10.35	13.83	-3.48	75%
10	Northern Coastal Plain	10.41	13.43	-3.01	78%
11	York-James	9.88	14.07	-4.19	70%
12	Southeast Virginia	13.91	13.24	0.67	105%
13	Eastern Shore	11.17	12.33	-1.16	91%
	Statewide	9.27	13.74	-4.47	67%

	DROUGHT REGION	OBSERVED	FEB 1, 2006 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	16.70	18.61	-1.92	90%
2	New River	10.39	16.42	-6.03	63%
3	Roanoke	9.35	17.79	-8.44	53%
4	Upper James	9.05	16.30	-7.24	56%
5	Middle James	9.63	16.63	-7.00	58%
6	Shenandoah	8.44	14.35	-5.91	59%
7	Northern Virginia	10.42	16.03	-5.60	65%
8	Northern Piedmont	9.95	16.42	-6.47	61%
9	Chowan	11.67	17.00	-5.32	69%
10	Northern Coastal Plain	12.23	16.57	-4.33	74%
11	York-James	10.83	17.59	-6.77	62%
12	Southeast Virginia	15.00	16.74	-1.74	90%
13	Eastern Shore	12.15	15.52	-3.38	78%
	Statewide	10.91	16.87	-5.96	65%

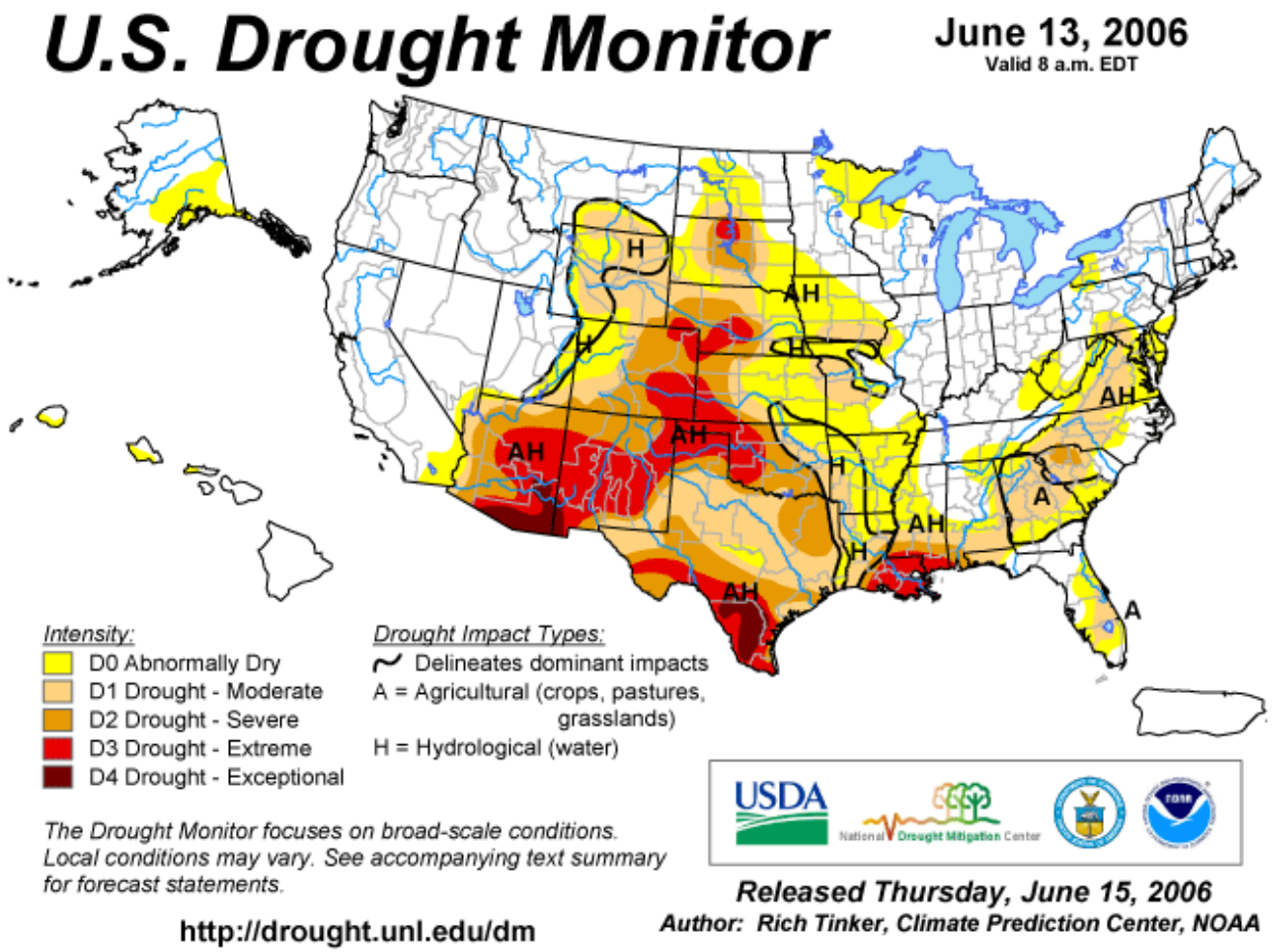
	DROUGHT REGION	OBSERVED	JAN 1, 2006 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	19.96	22.35	-2.39	89%
2	New River	13.46	19.63	-6.17	69%
3	Roanoke	12.33	21.70	-9.38	57%
4	Upper James	12.17	19.57	-7.40	62%
5	Middle James	12.54	20.30	-7.76	62%
6	Shenandoah	10.96	17.20	-6.24	64%
7	Northern Virginia	13.24	19.30	-6.06	69%
8	Northern Piedmont	12.53	19.94	-7.41	63%
9	Chowan	14.01	21.11	-7.10	66%
10	Northern Coastal Plain	15.39	20.32	-4.92	76%
11	York-James	14.91	21.73	-6.82	69%
12	Southeast Virginia	18.37	20.90	-2.53	88%
13	Eastern Shore	14.84	19.09	-4.25	78%
	Statewide	13.96	20.51	-6.55	68%

	DROUGHT REGION	OBSERVED	DEC 1, 2005 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	23.29	25.99	-2.70	90%
2	New River	15.86	22.34	-6.48	71%
3	Roanoke	15.90	24.96	-9.06	64%
4	Upper James	14.76	22.52	-7.76	66%
5	Middle James	16.67	23.47	-6.80	71%
6	Shenandoah	12.53	19.79	-7.26	63%
7	Northern Virginia	15.86	22.40	-6.53	71%
8	Northern Piedmont	15.67	23.22	-7.55	67%
9	Chowan	19.69	24.13	-4.44	82%
10	Northern Coastal Plain	19.76	23.60	-3.83	84%
11	York-James	19.00	25.11	-6.12	76%
12	Southeast Virginia	22.42	24.08	-1.65	93%
13	Eastern Shore	18.75	22.33	-3.58	84%
	Statewide	17.43	23.63	-6.20	74%

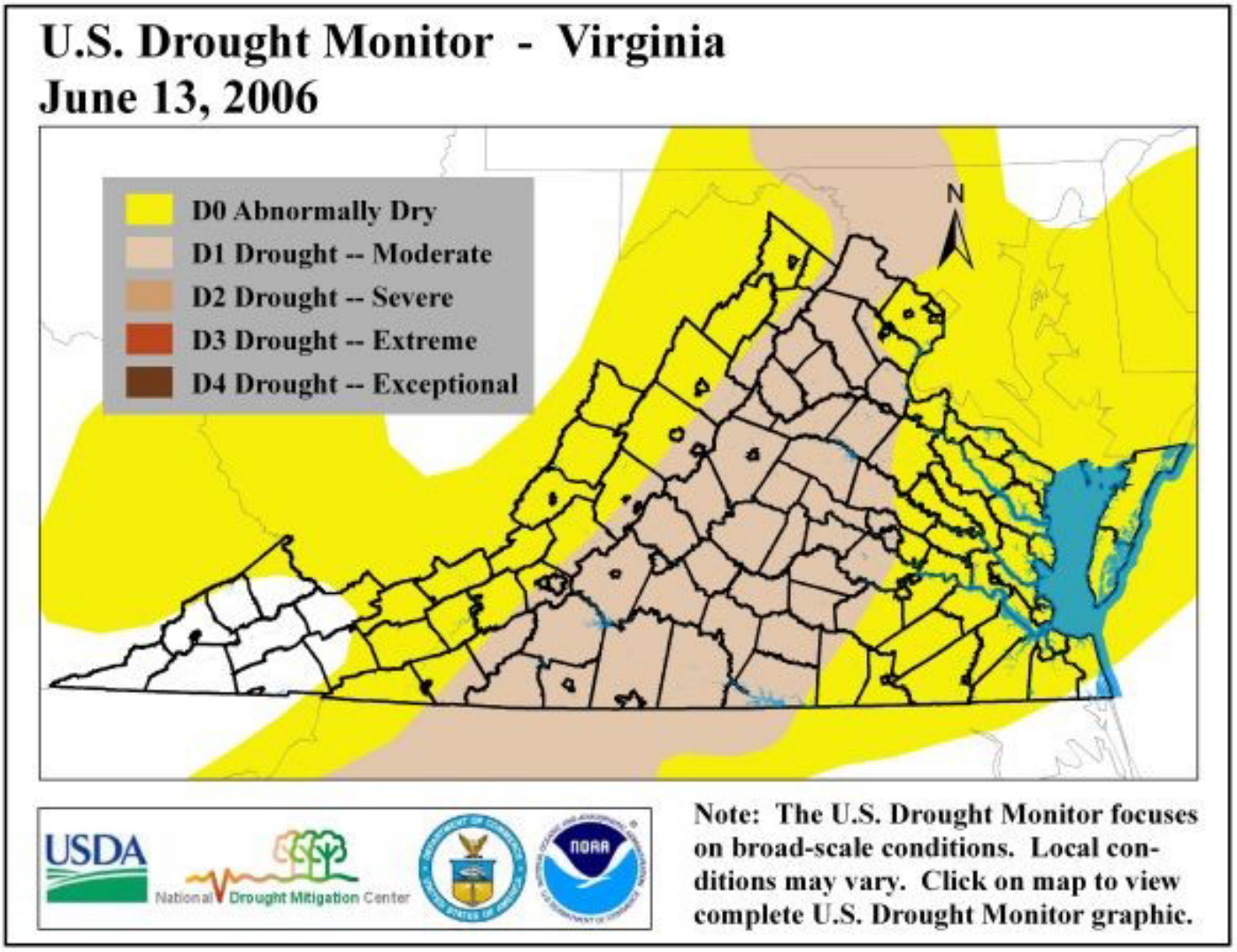
	DROUGHT REGION	OBSERVED	NOV 1, 2005 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	26.25	29.27	-3.03	90%
2	New River	19.59	25.37	-5.78	77%
3	Roanoke	19.84	28.32	-8.48	70%
4	Upper James	19.87	25.88	-6.01	77%
5	Middle James	20.13	26.98	-6.85	75%
6	Shenandoah	17.23	22.84	-5.61	75%
7	Northern Virginia	18.79	25.81	-7.01	73%
8	Northern Piedmont	19.35	27.01	-7.67	72%
9	Chowan	23.28	27.24	-3.96	85%
10	Northern Coastal Plain	23.29	26.73	-3.44	87%
11	York-James	22.15	28.48	-6.34	78%
12	Southeast Virginia	26.21	27.15	-0.93	97%
13	Eastern Shore	21.33	25.27	-3.94	84%
	Statewide	21.03	26.86	-5.83	78%

	DROUGHT REGION	OBSERVED	OCT 1, 2005 NORMAL	- JUN 15, 2006 DEPARTURE	% OF NORM.
1	Big Sandy	28.31	32.16	-3.85	88%
2	New River	23.61	28.54	-4.93	83%
3	Roanoke	26.11	32.03	-5.92	82%
4	Upper James	24.86	29.13	-4.27	85%
5	Middle James	26.57	30.82	-4.25	86%
6	Shenandoah	22.28	26.03	-3.75	86%
7	Northern Virginia	27.43	29.28	-1.85	94%
8	Northern Piedmont	27.70	31.01	-3.31	89%
9	Chowan	27.75	30.82	-3.07	90%
10	Northern Coastal Plain	30.10	30.24	-0.13	100%
11	York-James	28.65	32.01	-3.37	89%
12	Southeast Virginia	32.88	30.81	2.08	107%
13	Eastern Shore	27.27	28.48	-1.22	96%
	Statewide	26.50	30.36	-3.86	87%

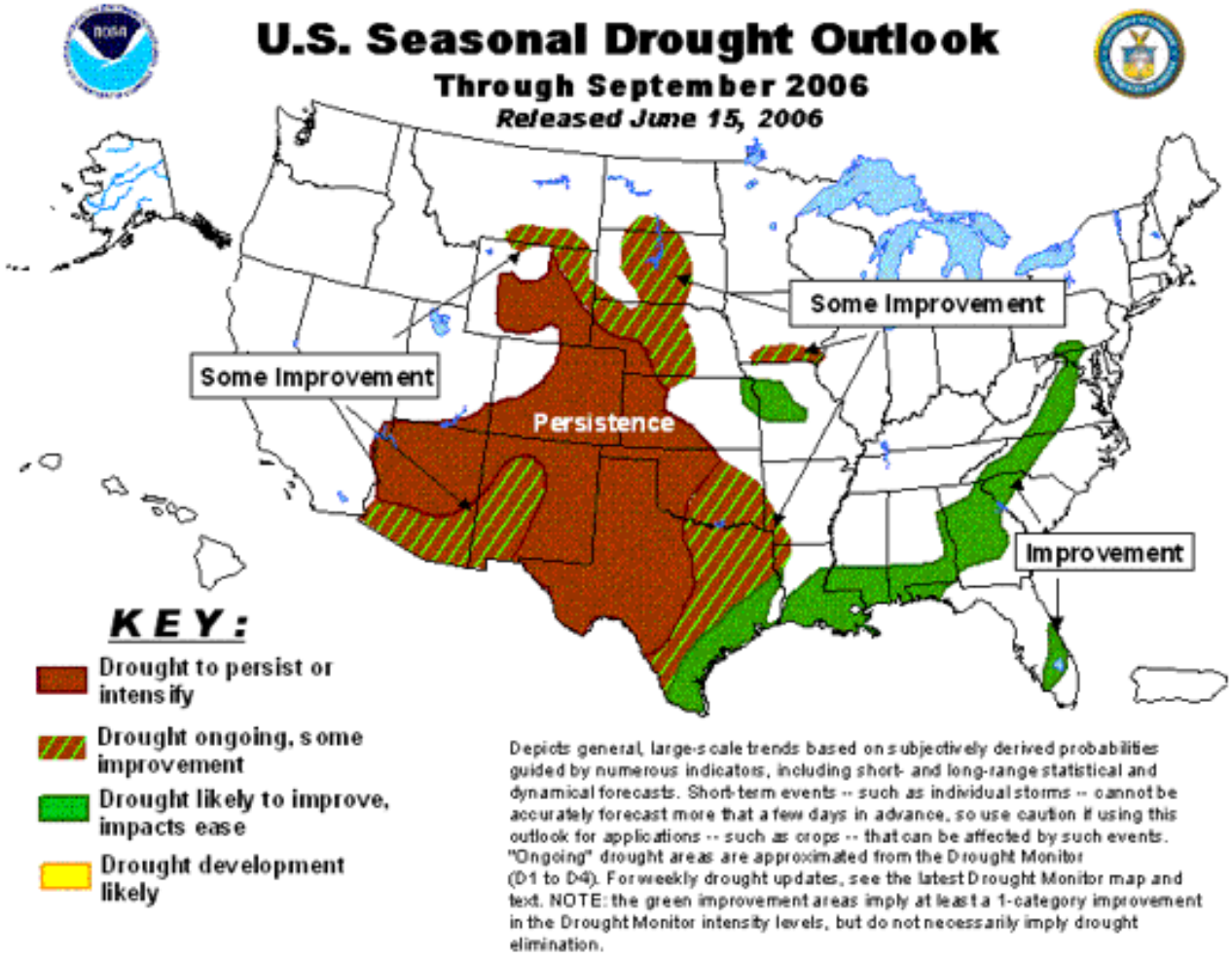
APPENDIX B


U.S. Drought Monitor
June 13, 2006
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, June 15, 2006
Author: Rich Tinker, Climate Prediction Center, NOAA

APPENDIX C


U.S. Drought Monitor - Virginia
June 13, 2006
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
Through September 2006
Released June 15, 2006
Some Improvement
Some Improvement
Persistence
Improvement
KEY:
Drought to persist or intensify
Drought ongoing, some improvement
Drought likely to improve, impacts ease
Drought development likely
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 that 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 approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text. 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.