State of Rhode Island and Providence Plantations
Water Resources Board
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To: Public Drinking Water Protection Committee
Through: Juan Mariscal, P.E., General Manager
From: Beverly O'Keefe, Supervising Planner
Date: September 26, 2006
Subject: Drought Update: Current Water Conditions

BACKGROUND: Pursuant to State Guide Plan Element 724: The Rhode Island Drought Management Plan, the Water Resources Board is required to assess water conditions monthly. Staff has assembled climate information from a variety of sources to monitor the potential for drought conditions in Rhode Island which is summarized below:

Data Source	Date	Report Summary
NOAA NWS Taunton MA Climate Report	26 Sept. 2006	2.58" received TF Green Airport MTD - 0.52" below normal for September
USGS Surface Water Runoff Report	Aug. 2006	RI – Normal
Scituate Reservoir	Aug 31 2006	93% of Capacity)
USGS Groundwater Level Summary	Aug. 2006	All Areas RI -Above Normal
USGS RI Groundwater Level Detail Well Report	Aug. 2006	1Record High Water Level
NOAA NWS Drought Severity Index: Palmer	23 Sept 2006	Very Moist Spell
NOAA NWS Crop Moisture Index	23 Sept 2006	Slightly Dry/Favorably Moist
NOAA NWS Drought Monitor Seasonal Assessment	19 Sept 2006	Normal
NOAA Seasonal Drought Outlook (through November 2006)	21 Sept 2006	Normal Conditions

Rhode Island month to date rainfall recorded at 2.58 inches at T.F. Green Airport (normal rainfall value through September 26 is 3.10 inches). Rainfall recorded since January 1 totals +36.48 inches, a departure from normal of +2.86 inches for the nine-month period. Preliminary National Weather Service Precipitation Data ending August 2006 is provided as an attachment.

The **USGS Water Conditions Statement** is summarized in three tables (Surface Water Runoff, Ground-water Level Conditions, and Summary of Rhode Island Ground-Water Levels) embedded in this memorandum.

Surface-water flows at the end of August 2006 were normal (between highest and lowest 25 percent of flows for August) for Massachusetts and Rhode Island.

Ground-water levels were generally above normal (highest 25 percent of levels for August) for all of Rhode Island.

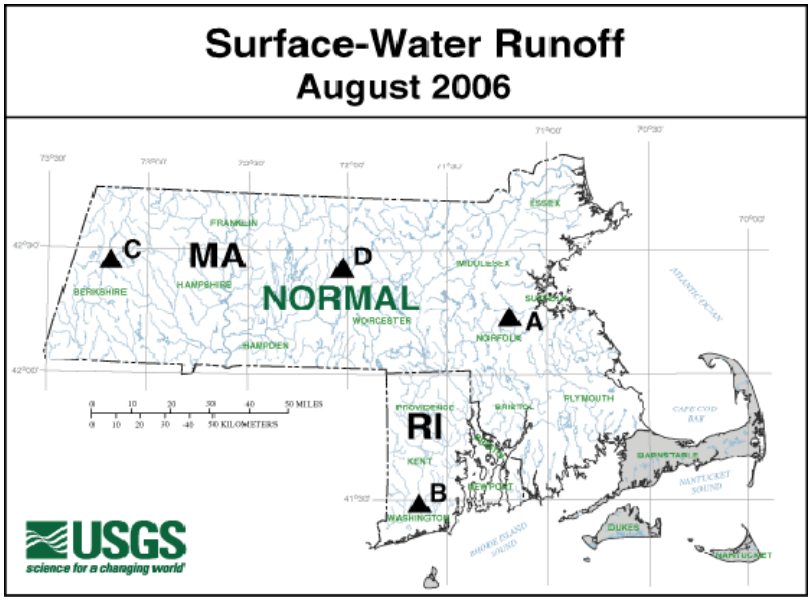


Table 1: Surface Water Runoff

COMPARISON WITH MONTHLY NORMAL RANGE

- ABOVE NORMAL – within the highest 25 percent of record for this month
- NORMAL RANGE
- BELOW NORMAL – within the lowest 25 percent of record for this month
- NO STREAM DATA
- ▲ INDEX STREAM GAGE AND IDENTIFIER LETTER

NOTE: Additional sites from those shown are used to determine ranges

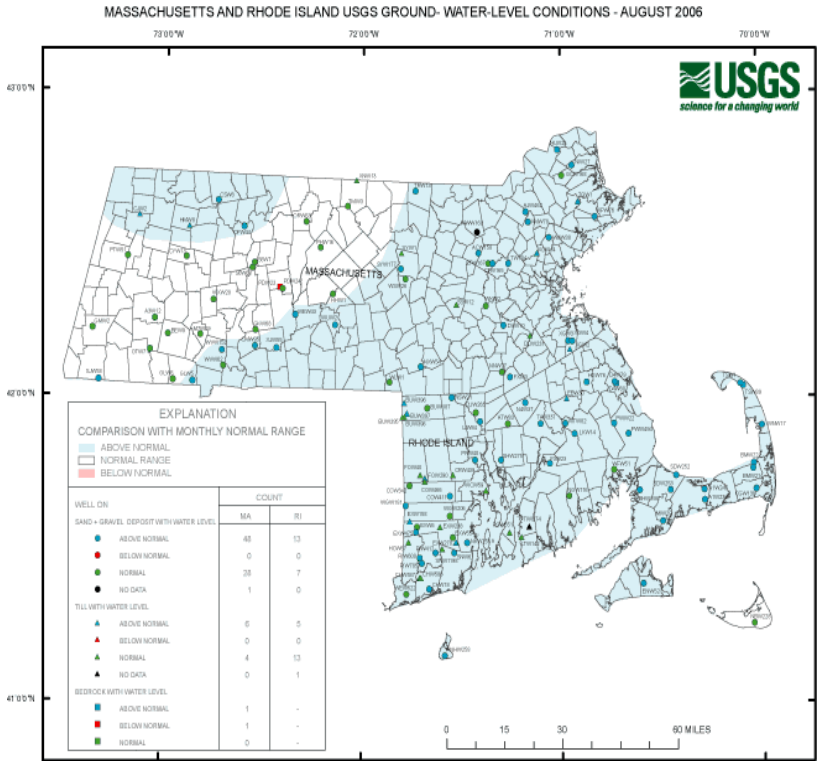


Table 2: Ground Water-Level Conditions

During August, one well in Rhode Island, New Shoreham 258 (Block Island), which has been measured since 1991, recorded a new record-high level for the month of August.

Quabbin and Scituate Reservoirs were 96- and 93- percent full, respectively, at the end of August. In comparison, Quabbin and Scituate Reservoirs were 98- and 99- percent full, respectively, at the end of July.

TABLE 3: SUMMARY OF GROUND-WATER LEVELS August 2006 PROVISIONAL

(NOTE: Wells with * also available in real-time at top of Ground-Water Data page; OWc, monthly measured value used in high ground-water level estimation report, USGS Open-File Report 80-1205.)

WELL	LOT	IOT	START YEAR OF RECORD	NET CHANGE IN MONTH (FEET)		NET CHANGE IN ONE YEAR (FEET)		DEPARTURE FROM MONTHLY MEDIAN (FEET)		WATER LEVEL BELOW LAND-SURFACE DATUM (OWc) (FEET)		DAY
RHODE ISLAND												
BURRILLVILLE 187	TS	1968		-	1.02	+	0.91	+	0.54	15.82		25
BURRILLVILLE 395	UT	1992		+	1.11	+	1.04	+	0.52	9.77		28
BURRILLVILLE 396	VT	1992		-	0.12	+	0.78	+	0.78	5.41		29
BURRILLVILLE 397	HT	1992		-	0.94		-----	+	2.69	19.67		28
BURRILLVILLE 398	HT	1992		-	0.28		-----	+	0.26	10.75		28
CHARLESTOWN 18	FS	1946		-	1.90	+	1.99	+	1.61	17.49		25
CHARLESTOWN 586	VT	1992		-	0.20	+	0.08	+	0.08	4.11		25
CHARLESTOWN 587	ST	1992		-	1.78	+	0.89	+	0.53	11.10		25
COVENTRY 342	VS	1991		-	1.08	+	1.34	+	0.28	10.45		25
COVENTRY 411	SS	1961		-	1.09	+	1.17	+	0.63	21.50		25
COVENTRY 466	VT	1992		-	0.56	+	1.33	+	0.29	4.11		24
CRANSTON CITY 439	ST	1992		-	3.20	+	1.17	+	0.62	18.58		24
CUMBERLAND 265	SS	1946		-	1.35	+	0.86	+	0.74	14.16		25
EXETER 6	VS	1948		-	0.86	+	0.75	+	0.40	6.32		25
EXETER 158	ST	1991		-	4.41	+	2.86	+	1.92	14.13		25
EXETER 238	FT	1991		-	0.34	+	0.76	+	0.06	12.59		25
EXETER 278	HT	1991		-	4.05	+	4.16	+	2.43	15.51		25
EXETER 475	VS	1981		-	1.13	+	1.30	+	0.72	14.81		25
EXETER 554	SS	1988		-	0.54	+	0.99	+	0.29	10.39		25
FOSTER 40	HT	1991		-	2.38	+	2.30	-	0.36	8.91		25
FOSTER 290	HT	1992		-	3.04		-----	+	1.29	10.60		24
HOPKINTON 67	ST	1991		-	2.44	+	2.25	+	1.15	18.26		25
LINCOLN 84	VS	1946		-	0.57	+	0.56	+	0.84	5.01		25
LITTLE COMPTON 142	ST	1992		-	4.52		-----	+	0.46	16.84		25
NEW SHOREHAM 258	UT	1991			-----	+	1.13	+	1.13	11.52	>	26
NORTH KINGSTOWN 255	VS	1954		-	1.28	+	0.91	+	0.65	8.63		25
NORTH SMITHFIELD 21	TS	1947		-	0.95	+	0.81	+	0.86	8.93		25
PORTSMOUTH 551	HT	1992		-	13.41	+	4.03	+	1.96	44.08		29
PROVIDENCE 48	TS	1944		-	0.40	+	0.63	+	2.81	4.08		25
RICHMOND 417	VS	1976		-	0.61	+	0.69	+	0.34	7.09		25
RICHMOND 600*	TS	1977		-	1.94	+	1.45	+	0.85	33.50		25
RICHMOND 785	FS	1989		-	0.78	+	1.44	+	1.44	22.71		25
SOUTH KINGSTOWN 6	VS	1955		-	1.25	+	1.05	+	0.82	12.11		25
SOUTH KINGSTOWN 1198	FS	1988		-	1.46	+	1.11	+	0.15	9.56		25
TIVERTON 274	TT	1990			-----		-----		-----	-----		
WARWICK 59	ST	1991		-	4.67	+	4.61	+	1.29	10.53		25
WESTERLY 522	FS	1969		-	1.14	+	1.17	+	0.38	13.10		25
WEST GREENWICH 181	US	1969		-	0.62	+	0.66	+	0.47	16.14		25
WEST GREENWICH 206	ST	1991		-	0.62	+	1.94	+	0.34	5.09		25

>> SET NEW HIGH OR EQUALED HIGHEST RECORDED WATER LEVEL FOR PERIOD OF RECORD
> SET NEW HIGH OR EQUALED HIGHEST RECORDED WATER LEVEL FOR END OF NOVEMBER
<< SET NEW LOW OR EQUALED LOWEST RECORDED WATER LEVEL FOR PERIOD OF RECORD
< SET NEW LOW OR EQUALED LOWEST RECORDED WATER LEVEL FOR END OF NOVEMBER
------ - DATA NOT AVAILABLE

TOPOGRAPHIC (TOPO) SETTING: F=FLAT, G=FLOOD PLAIN, H=HILLTOP, S=HILLSIDE,
T=TERRACE, U=UNDULATING, V=VALLEY, W=UPLAND DRAW, LITHOLOGY (LITHO): G=GRAVEL, R=ROCK, S=SAND, T=TILL

The NOAA National Weather Service (NWS) Drought Severity Index for the period ending July 22, 2006 shows extremely moist conditions for the region (Table 4). The Crop Moisture Index for the same time period shows Slightly dry/favorably moist conditions (Table 5).

Table 4: Drought Severity Index

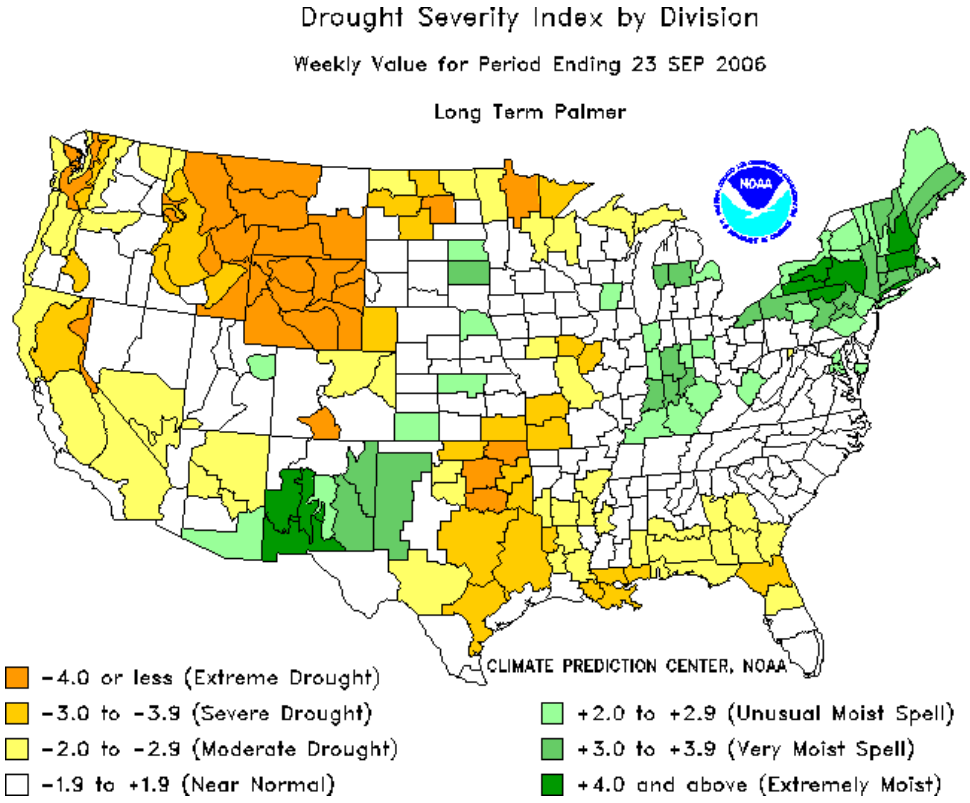


Table 5: Crop Moisture Index

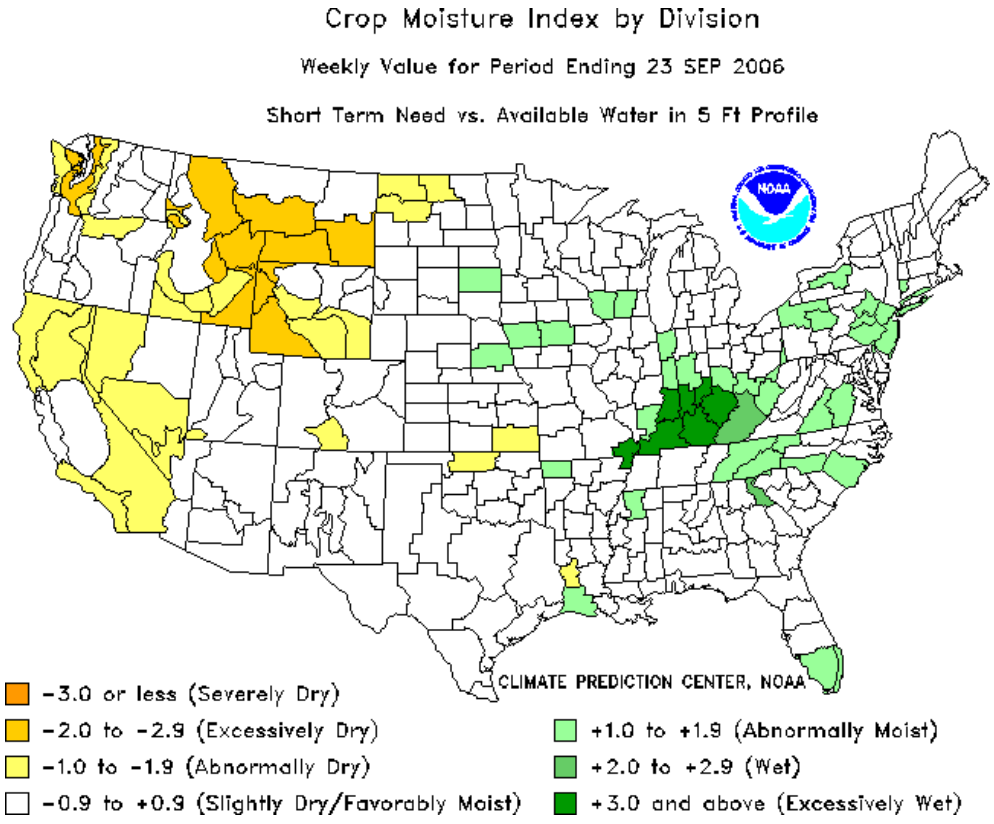
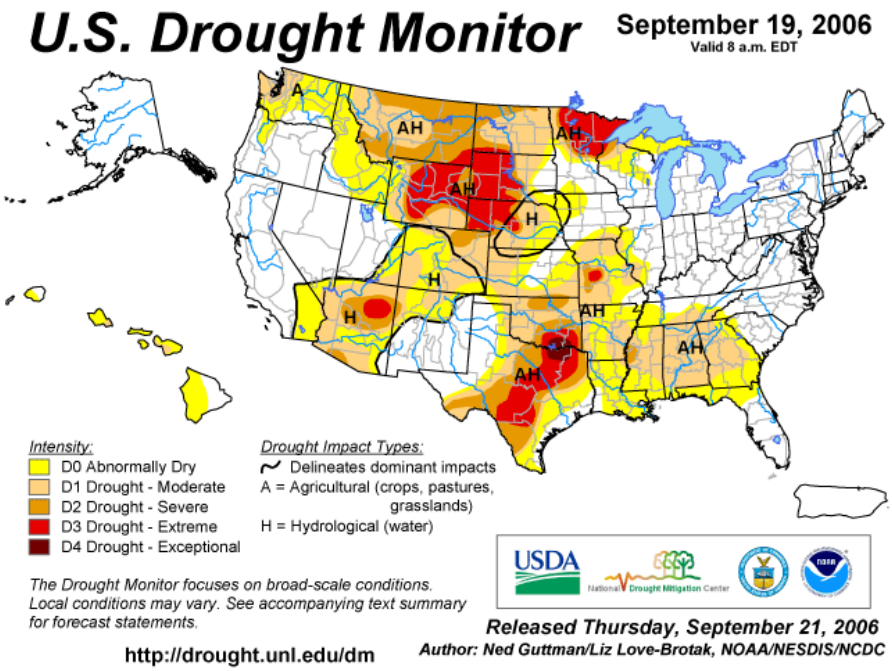
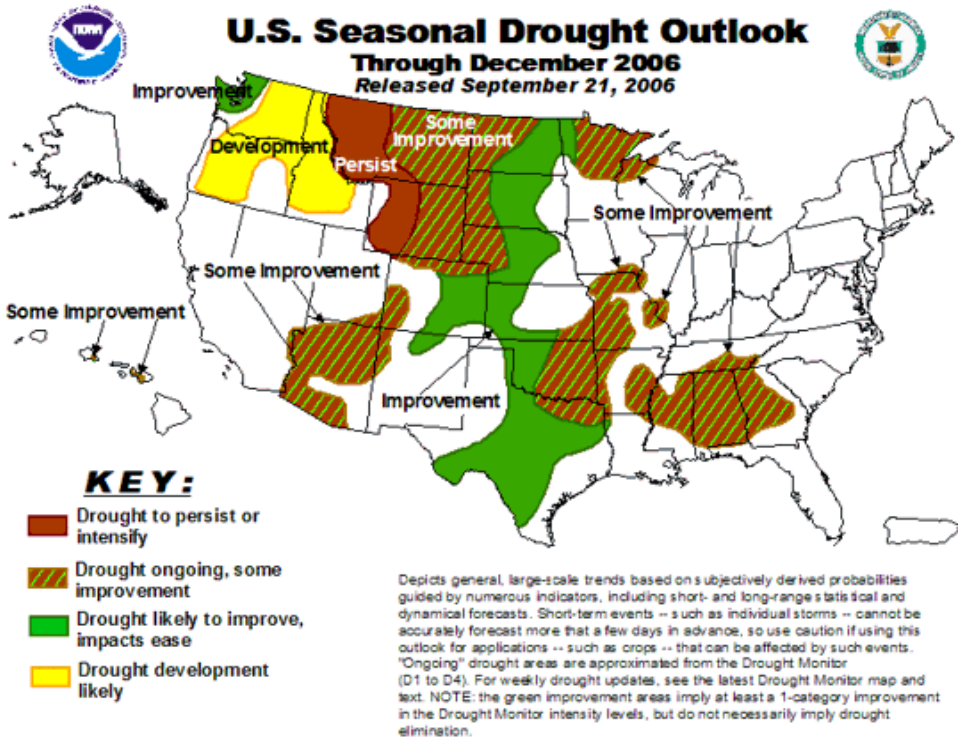


Table 6: US Drought Monitor



Tables 6 and 7 present national seasonal assessment and state rankings based on precipitation. The Drought Monitor (Table 6) focuses on broad scale conditions, and portrays Rhode Island experiencing a normal intensity through July 18, 2006. The NOAA Seasonal Drought Outlook through October 2006 projects "normal" conditions for Rhode Island.

Table 7: NOAA Seasonal Drought Outlook



DISCUSSION

Precipitation patterns for Rhode Island have remained within normal limits through September 2006. Water conditions will continue to be closely monitored over the next month. The Committee and the Water Resources Board will continue to closely monitor conditions.

RECOMMENDATIONS : Information only.

Additional Information on Water Conditions:
NOAA NWS Climate Report
http://www.erh.noaa.gov/box/fcsts/BOSESFBOX.html
NOAA Drought Severity Index by Division
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/palmer.gif
Crop Moisture Index by Division http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/cmi.gif
NOAA Drought Information Center
http://www.drought.noaa.gov/
U. S. Geological Survey – MA & RI
http://ma.water.usgs.gov/