State of Rhode Island and Providence Plantations
Water Resources Board
Justice William E. Powers Building, Third Floor
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Date: June 25, 2008

To: Robert Griffith, Ph.D., Chair, Water Resources Protection & Use Committee
WRP&U Committee Members

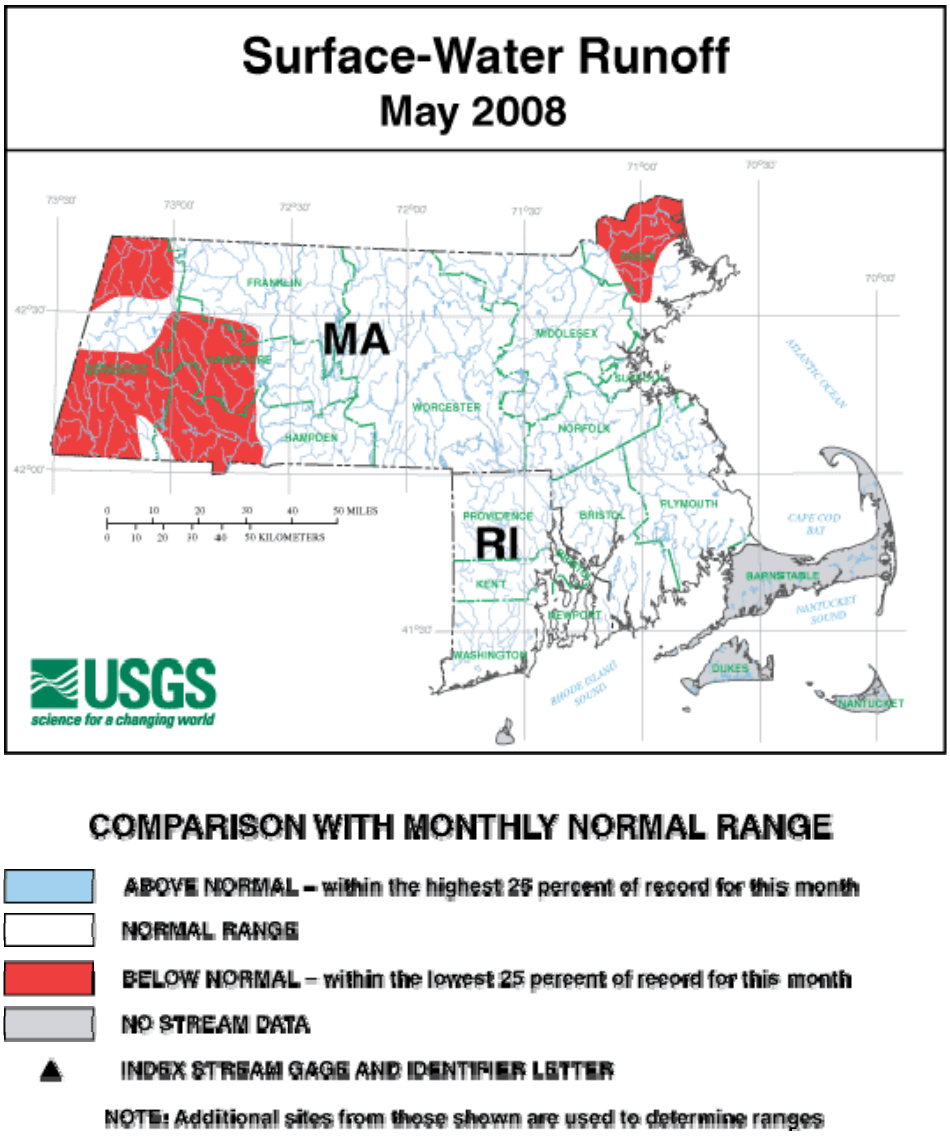
Through: Juan Mariscal, P.E.
General Manager

From: Beverly O'Keefe, M.A.
Supervising Planner

Re: Drought Management Plan Program – Current 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	June 30, 2008	2.42" received thru June 30, 2008, T.F. Green Airport; -0.86" below normal since June 1; +1.48" above normal since Jan. 1.
USGS Surface Water Report	May, 2008	Normal –Rhode Island
Scituate Reservoir	June 30, 2008	95.8% of Capacity (282.60 feet as of June 30, 2008)
USGS Groundwater Level Summary	May, 2008	Generally Normal
USGS RI Groundwater Level Well Report	May, 2008	No record-high or record-low monthly mean discharges
NWS Drought Severity Index: Palmer	21June 2008	Near Normal
NOAA NWS Crop Moisture Index	21 June 2008	Near Normal
NOAA NWS Northeast Drought Monitor Seasonal Assessment	17 June 2008	Abnormally Dry
NOAA Seasonal Drought Outlook (through May 2008)	19 June 2008	Near Normal
NOAA Standard Precipitation Index – Six Months	May 2008	Very Moist



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). Surface-water flows at the end of May 2008 were generally normal (between lowest and highest 25 percent of flows for May) in Rhode Island. This assessment is based on monthly flow statistics (30-year period from 1971 to 2000) for 54 near-real-time streamflow-gaging stations with 30 or more years of record. No record-high or record-low monthly mean discharges were recorded during the month of April.

Ground-water levels were also generally normal in Rhode Island, including Block Island. No record-high or record-low monthly mean discharges were recorded during the month of May.

Borden Brook/Cobble Mountain, Quabbin and Scituate Reservoirs were 93-, 99-, and 103-percent full, respectively, at the end of May. In comparison, Borden Brook/Cobble Mountain, Quabbin, and Scituate Reservoirs were 94-, 100- and 103-percent full, respectively, at the end of April.

Table 2: Ground Water-Level Conditions

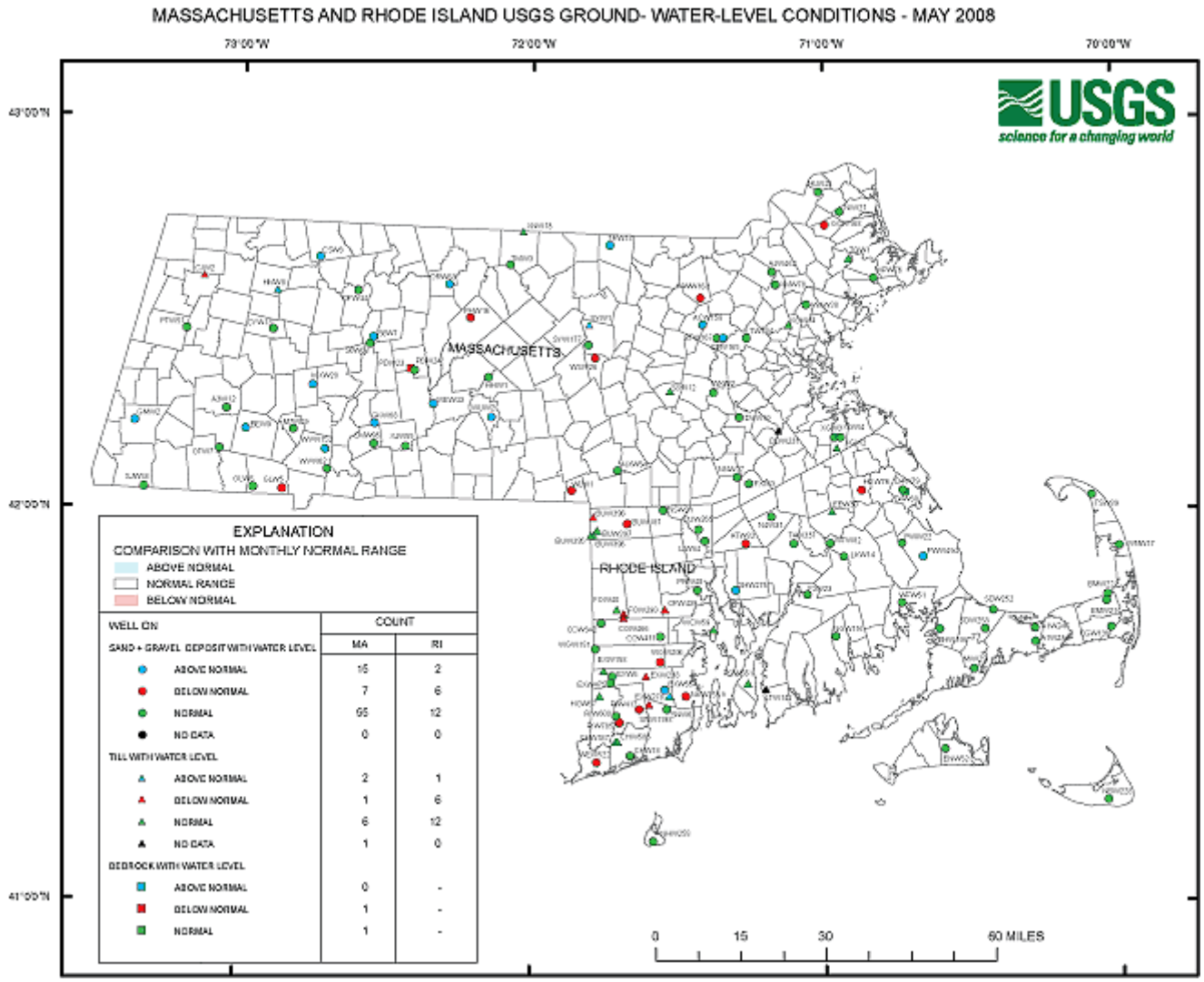


TABLE 3: SUMMARY OF GROUND-WATER LEVELS April 2008 PROVISIONAL

(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 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	H	1968	- 0.40	- 0.54	- 0.46	14.83	28
BURRILLVILLE 395	UT	H	1992	- 0.67	-----	- 0.18	7.06	28
BURRILLVILLE 396	VT	H	1992	- 0.21	-----	- 0.36	5.51	28
BURRILLVILLE 397	HT	H	1992	- 2.92	-----	- 0.25	14.47	28
BURRILLVILLE 398	HT	H	1992	- 0.71	-----	- 0.29	8.30	28
CHARLESTOWN 18	FS	H	1946	- 0.88	- 1.82	- 0.62	16.99	29
CHARLESTOWN 586	VT	H	1992	- 0.08	-----	+ 0.03	3.64	29
CHARLESTOWN 587	ST	H	1992	- 0.48	-----	- 1.12	8.19	29
COVENTRY 342	VS	H	1991	- 0.70	- 0.80	- 0.22	8.93	28
COVENTRY 411	SS	H	1961	- 0.58	- 1.08	- 0.34	21.04	29
COVENTRY 466	VT	H	1992	- 0.17	-----	- 0.36	3.03 <	28
CRANSTON CITY 439	ST	H	1992	-----	-----	- 1.66	13.64	29
CUMBERLAND 265	SS	H	1946	- 0.06	- 0.32	+ 0.60	11.83	28
EXETER 6	VS	H	1948	- 0.38	- 1.06	- 0.13	5.52	28
EXETER 158	ST	H	1991	- 0.88	- 0.64	+ 0.11	7.37	28
EXETER 238	FT	H	1991	- 0.23	- 0.69	- 0.25	12.14	29
EXETER 278	HT	H	1991	- 0.53	+ 0.54	+ 1.02	9.07	29
EXETER 475	VS	H	1981	- 0.56	- 1.24	- 0.38	13.63	28
EXETER 554	SS	H	1988	+ 0.31	+ 0.57	+ 0.74	8.80	29
FOSTER 40	HT	H	1991	- 0.39	- 1.92	- 0.18	5.33	28
FOSTER 290	HT	H	1992	- 0.96	-----	- 0.78	6.35	28
HOPKINTON 67	ST	H	1991	- 0.72	- 1.65	- 0.37	14.47	28
LINCOLN 84	VS	H	1946	- 0.24	- 1.71	- 0.31	5.05	28
LITTLE COMPTON 142	ST	H	1992	-----	-----	+ 0.13	13.21	28
NEW SHOREHAM 258	UT	H	1991	- 0.28	-----	- 0.19	11.29	26
NORTH KINGSTOWN 255	VS	H	1954	- 0.21	- 1.84	- 1.01	8.48	29
NORTH SMITHFIELD 21	TS	H	1947	- 0.49	- 1.03	- 0.07	7.56	28
PORTSMOUTH 551	HT	H	1992	- 2.89	-----	+ 1.08	36.03	28
PROVIDENCE 48	TS	H	1944	- 0.14	- 0.73	+ 1.55	4.20	27
RICHMOND 417	VS	H	1976	- 0.28	- 0.64	- 0.36	6.70	29
RICHMOND 600 *	TS	H	1977	- 0.22	- 0.63	- 0.12	33.36	29
RICHMOND 785	FS	H	1989	- 0.21	- 3.71	- 1.79	24.54	29
SOUTH KINGSTOWN 6	VS	H	1955	- 0.58	- 0.85	- 0.08	11.51	29
SOUTH KINGSTOWN 1198	FS	H	1988	- 0.57	- 1.04	- 0.64	8.00	29
WARWICK 59	ST	H	1991	- 0.19	- 0.49	+ 0.16	5.16	27
WESTERLY 522	FS	H	1969	- 0.51	- 0.85	- 0.47	12.47	29
WEST GREENWICH 181	US	H	1969	- 0.49	- 0.30	+ 0.12	15.61	28
WEST GREENWICH 206	ST	H	1991	- 0.24	- 0.56	- 0.31	4.30	29

>> 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 JANUARY
<< 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 JANUARY
------ - 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 May 24, 2008 shows “near normal” for Rhode Island (Table 4). The Crop Moisture Index for the same time period shows “slightly dry/favorably moist” conditions (Table 5).

Table 4: Drought Severity Index

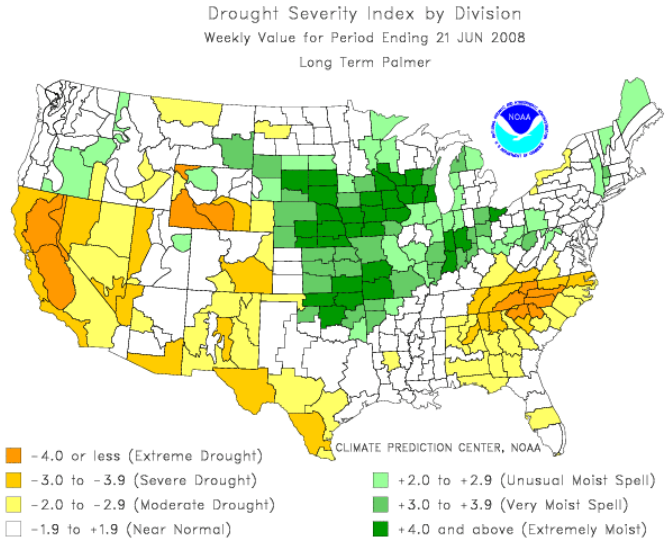


Table 5: Crop Moisture Index

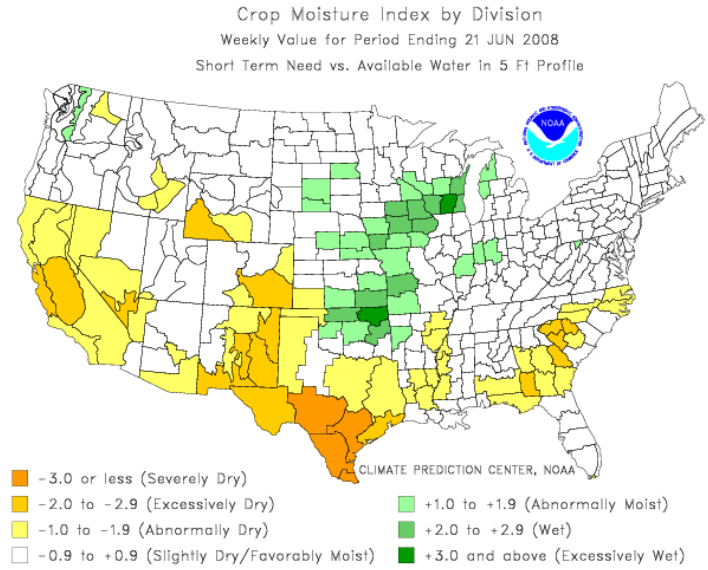
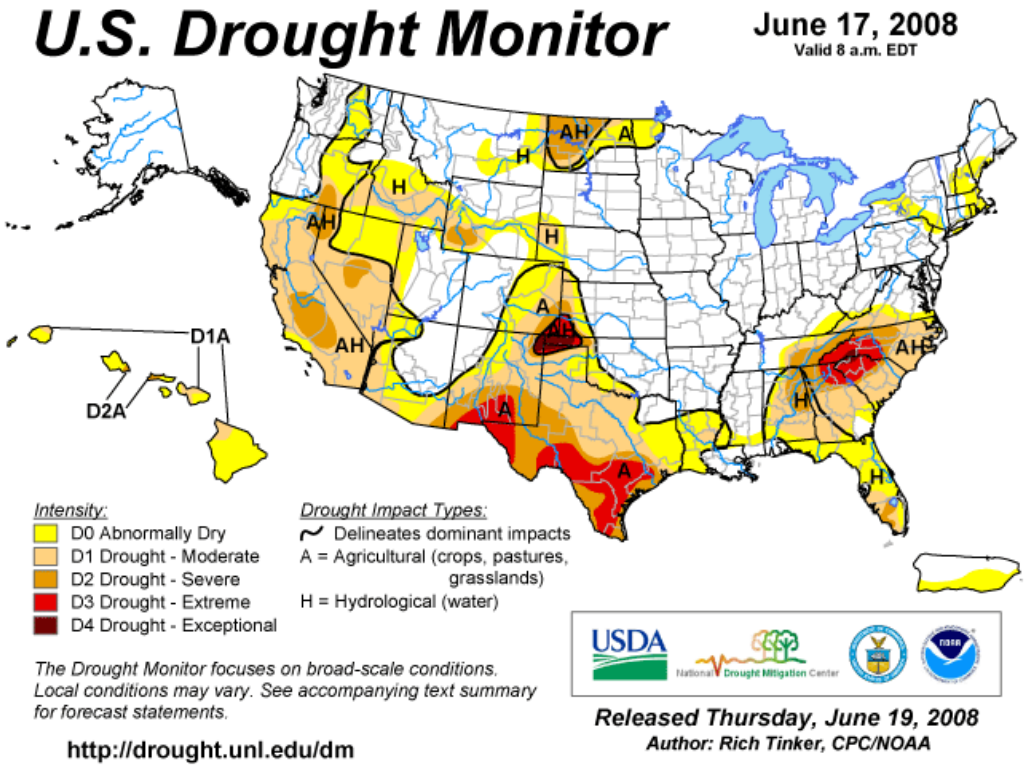
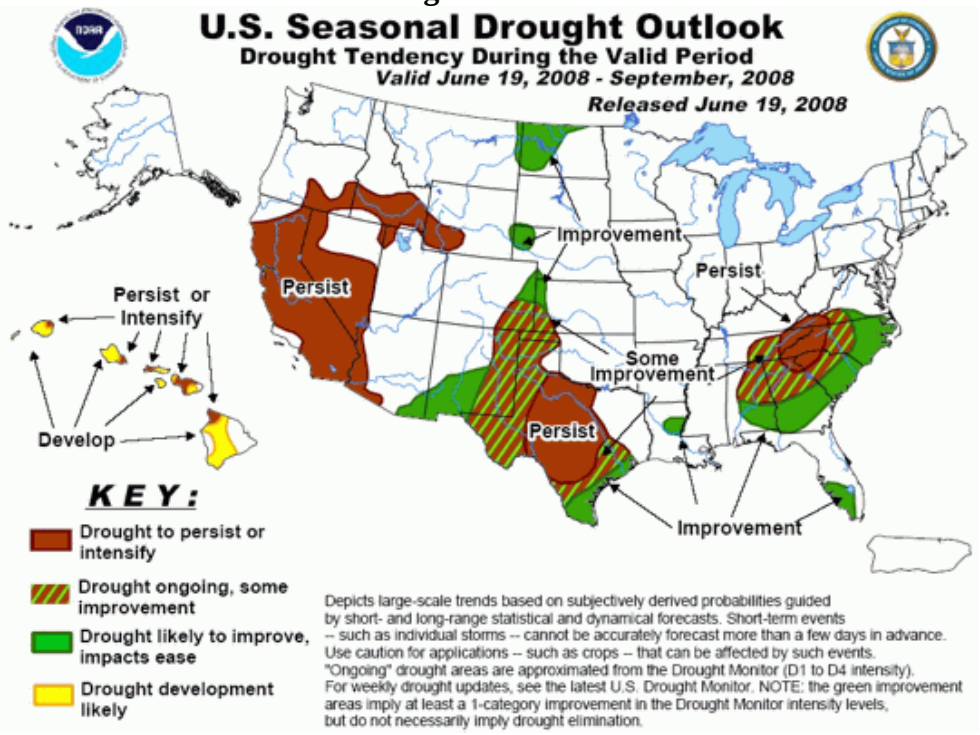


Table 6: US Drought Monitor



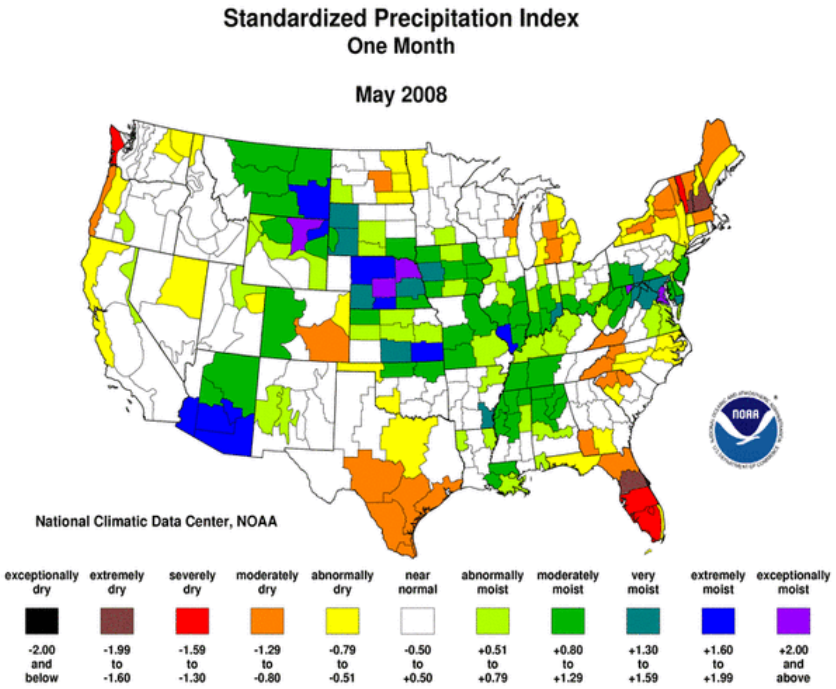
Tables 6 and 7 present national seasonal assessment and state rankings based on precipitation. The Northeast Drought Monitor (Table 6) portrays Rhode Island experiencing "abnormally dry" conditions through June 17, 2008. The NOAA Seasonal Drought Outlook through June 19, 2008 reports "normal" conditions for Rhode Island.

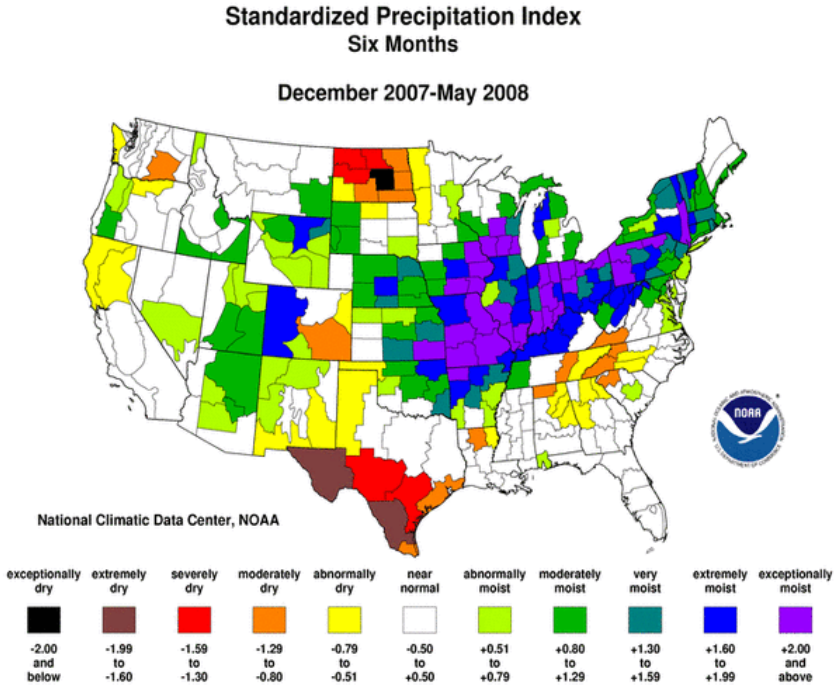
Table 7: NOAA Seasonal Drought Outlook



Current Standardized Precipitation Index

The Standardized Precipitation Index (SPI) is a way of measuring drought that is different from the Palmer drought index (PDI). Like the PDI, this index is negative for drought, and positive for wet conditions. But the SPI is a probability index that considers only precipitation, while Palmer's indices are water balance indices that consider water supply (precipitation), demand (evapo-transpiration) and loss (runoff). The SPI One-Month and the Six-Month condition is “near normal” for Rhode Island.





DISCUSSION

Water conditions have continued to improve throughout the spring and will continue to be closely monitored over the next month by the Water Resources Board staff. The Drought Steering Committee did not meet during June 2008 although meteorological and hydrological conditions were reviewed. Below normal ground water conditions continue so that the current "drought advisory" condition will continue. Ground water levels especially in the southern region of Rhode Island continue to record below normal levels. A meeting of the Drought Steering Committee will be convened late in July to review conditions.

The "Community Collaborative Rain, Hail & Snow Network" (CoCoRaHS) program has forwarded an email congratulating Rhode Island and the National Weather Service for the high participation rate of the new "citizen scientists. (Attachment).

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/