

## Water Supply Outlook

[http://www.potomacriver.org/water\\_supply/status.htm](http://www.potomacriver.org/water_supply/status.htm)

May 4, 2007

To subscribe: please email [coop@icprb.org](mailto:coop@icprb.org)



## Interstate Commission on the Potomac River Basin (ICPRB)

51 Monroe Street, Suite PE-08

Rockville, MD 20850

Tel: (301) 984-1908 Ext. 139

ICPRB, through its Section for Cooperative Water Supply Operations (CO-OP), coordinates water supply operations during times of drought and recommends releases of stored water. These operations ensure adequate water supplies for the major Washington metropolitan area water users and for environmental flow levels.

### Summary/conclusions:

**The probability of releases this summer and fall from the Washington metropolitan area's back-up water supply reservoirs is below normal.** Generally, the use of Jennings Randolph and Little Seneca reservoirs is triggered by low flows brought about by a combination of low summer rainfall, low precipitation in the prior 12 months, and low groundwater levels. At present, most groundwater levels used for monitoring by ICPRB are above average. Precipitation in the prior year has been slightly above average in the Potomac basin. Flow levels have been above average but have recently fallen to median. The Southeastern U.S. is experiencing significant drought conditions, but the Mid-Atlantic region has had average to wet conditions. In the event that low-flow conditions develop this summer, the metro area is well-protected from a water supply shortage because of carefully designed drought-contingency plans.

### ICPRB outlook:

**There is a six to nine percent conditional probability that Potomac flow will drop below 600 to 700 million gallons per day (MGD) at Little Falls through December 31 of this year; at these flow levels, water supply releases from Jennings Randolph and Little Seneca Reservoirs may occur.** Releases occur when predicted flow is less than demand: typical summer demand during droughts is equal to 500 to over 700 MGD (plus a 100 MGD minimum flow recommendation at Little Falls) and most of the demand is met with water withdrawn from the Potomac.

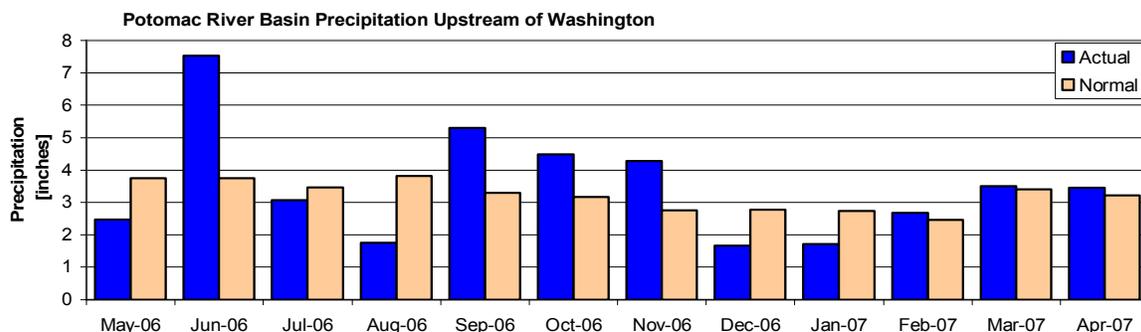
The conditional probability is estimated by analyzing the historical stream flow records and giving consideration to recent stream flow values, precipitation totals for the prior 12 months, current groundwater levels, and the current Palmer Drought Index. Past years in which watershed conditions most closely resemble current conditions are weighted more heavily in the determination of conditional probability. The historical probability is based on an analysis of the historical stream flow record without weighting for current conditions. The conditional probability of six to nine percent compares to a historical probability of ten to sixteen percent and is considered the more reliable indicator.

Outlook for Potomac River at Little Falls – Watershed conditions as of May 1, 2007

| Low flow threshold (MGD) | Historical probability of lower flow May 1 through December 31 | Conditional probability of lower flow May 1 through December 31 |
|--------------------------|--|---|
| 1200                     | 67%  | 62%   |
| 1000                     | 52%  | 45%   |
| 800                      | 27%  | 20%   |
| 700                      | 16%  | 9%  |
| 600                      | 10%  | 6%  |

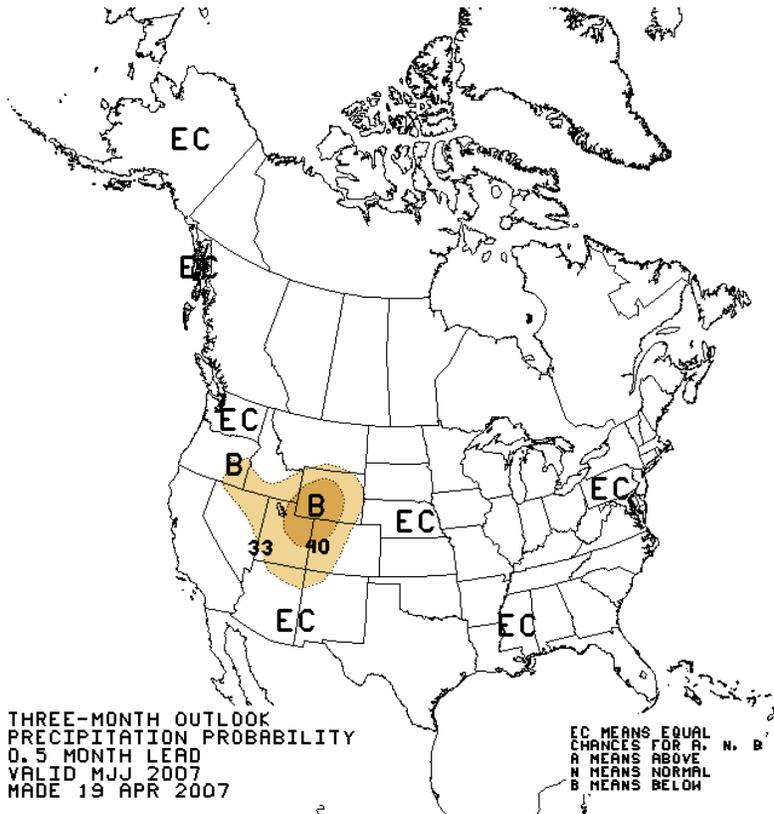
### Precipitation summary for the Potomac basin:

The National Weather Service's Middle Atlantic River Forecast Center reports that precipitation in the Potomac basin upstream of Washington, D.C., has been 3.5 inches above average for the prior 12 months (since May 1, 2006), for a total of 41.9 inches. In the first four months of 2007, precipitation in the basin has been 0.45 inches below average for a total of 11.3 inches.



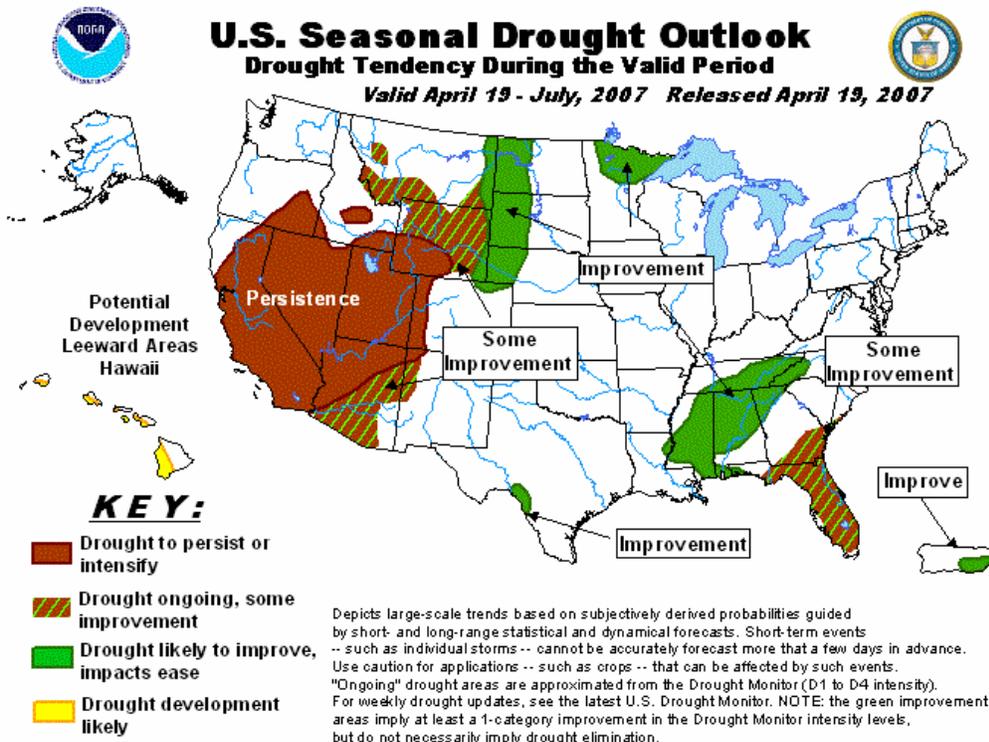
Data source: Middle Atlantic River Forecast Center, NWS

**Precipitation and drought outlook for April, May, and June:**

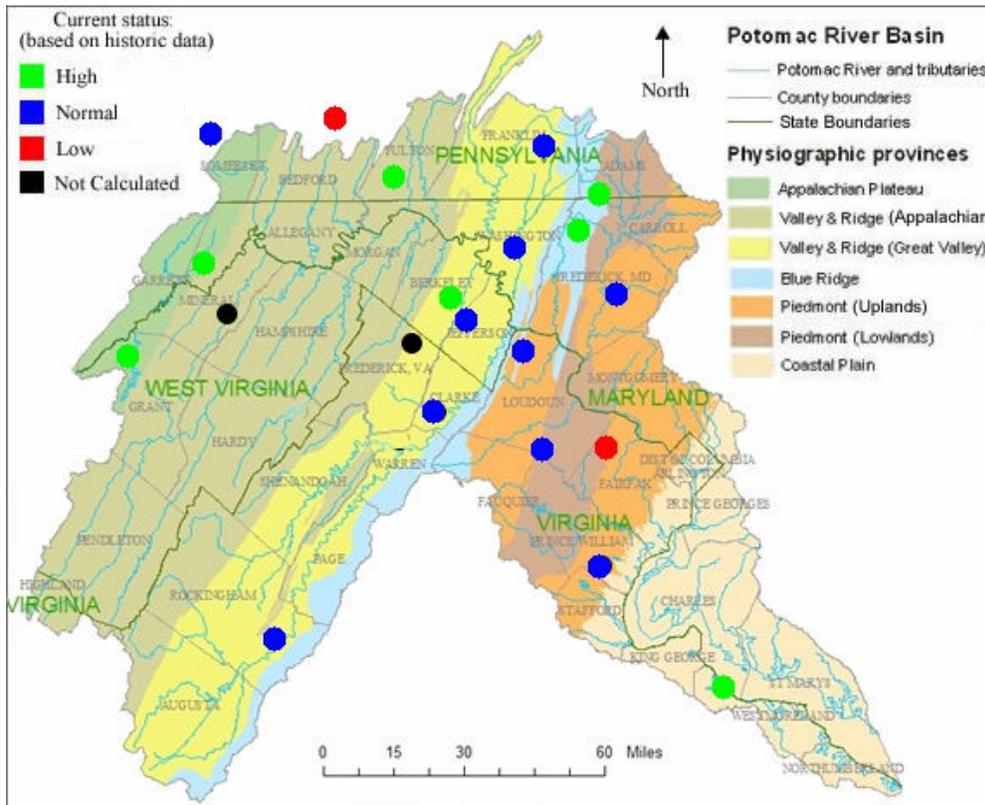


The Climate Prediction Center (CPC) of the National Oceanic and Atmospheric Administration predicts approximately equal chances of Potomac basin precipitation being either above or below normal for May, June, and July. (Image source: CPC).

As of April 19, the CPC's Drought Outlook does not forecast drought conditions for the Potomac basin.



**Groundwater:**



Monitoring wells show that groundwater levels are “normal” to “high” throughout most of the basin (Image source: United States Geological Survey, created 4/19/2007). The Great Valley has the best (highest) baseflow characteristics during droughts, and groundwater is “normal” in this physiographic province. In this graphic, USGS defines “high” as greater than 75<sup>th</sup> percentile, “normal” as between the 25<sup>th</sup> and 75<sup>th</sup> percentiles, and “low” as less than the 25<sup>th</sup> percentile.

Most wells tracked by ICPRB for drought forecasting were at above average levels in April.

**Reservoir Storage:**

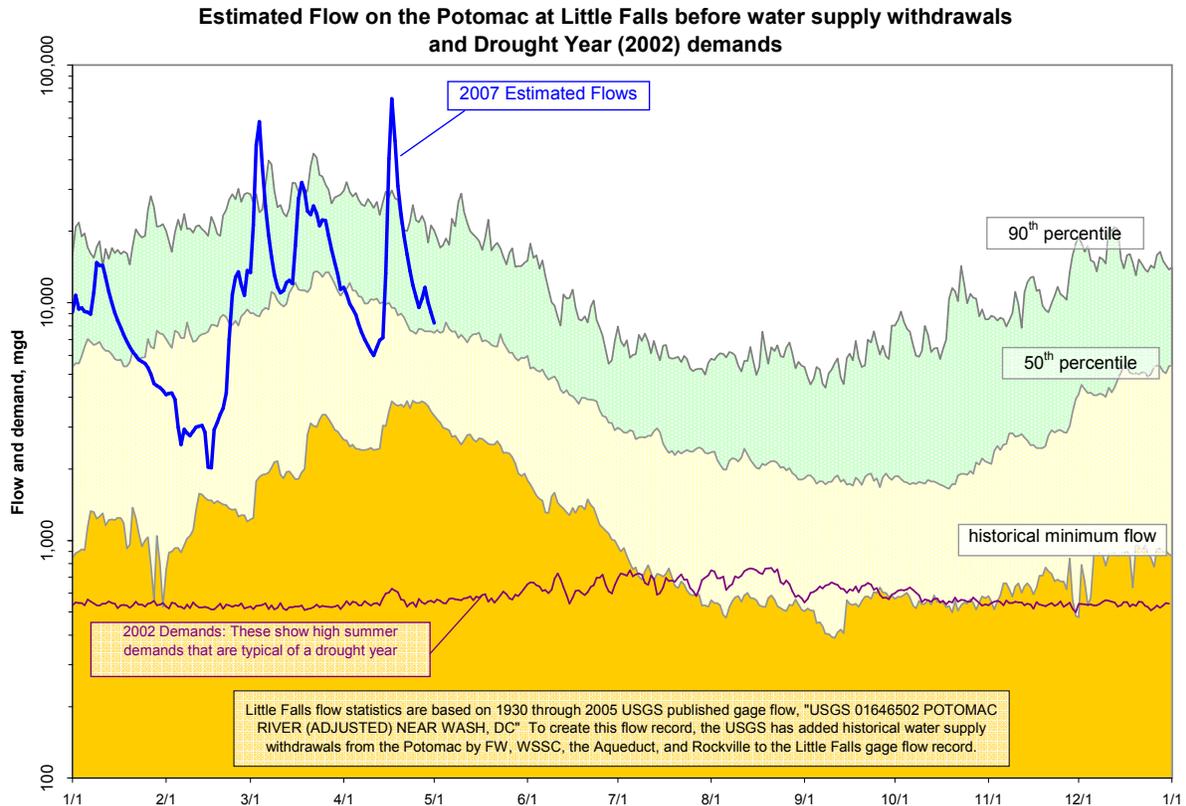
| Facility                        | Percent Full | Current usable storage, bg | Total usable capacity, bg |
|---------------------------------|--------------|----------------------------|---------------------------|
| WSSC’s Patuxent reservoirs      | 100          | 10.2                       | 10.2                      |
| FW’s Occoquan Reservoir         | 100          | 8.0                        | 8.0                       |
| Little Seneca Reservoir         | 100          | 3.8                        | 3.8                       |
| Jennings Randolph water supply  | 100          | 13.3                       | 13.3                      |
| Jennings Randolph water quality | 89           | 14.8                       | 16.5                      |
| Savage Reservoir                | 94           | 5.9                        | 6.2                       |

### Estimated Potomac River flow:

The estimated Potomac flow at Little Falls averaged 15.4 billion gallons per day in April, about fifty percent more than the normal flow for April. Estimated flow is the flow that would have occurred before water supply withdrawals, and is based on estimated withdrawal data and on provisional Little Falls gage data.

### Environmental Flow-by:

Average Potomac flow at Little Falls in March was well above the minimum flow recommendation of 100 MGD.



### Drought Status:

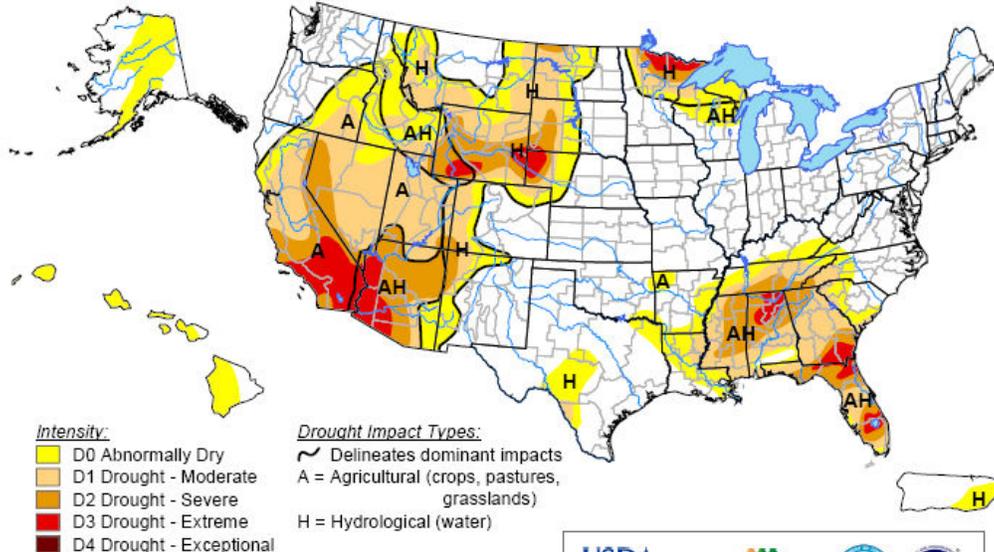
The Metropolitan Washington Council of Government's Drought Awareness Response Plan status is "Normal." The drought status would change to "Watch" if the CPC's drought monitor showed the entire Potomac basin in D-1 status (see below).

### Drought Monitor and Soil moisture:

The latest Drought Monitor (see next page) from the NOAA Climate Prediction Center (CPC) indicates normal conditions for the Potomac Basin (i.e., no drought status shown). The Palmer Drought Severity Index shows near-normal soil moisture conditions for most of the basin (see bottom graphic on the next page).

# U.S. Drought Monitor

April 24, 2007  
Valid 8 a.m. EDT



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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

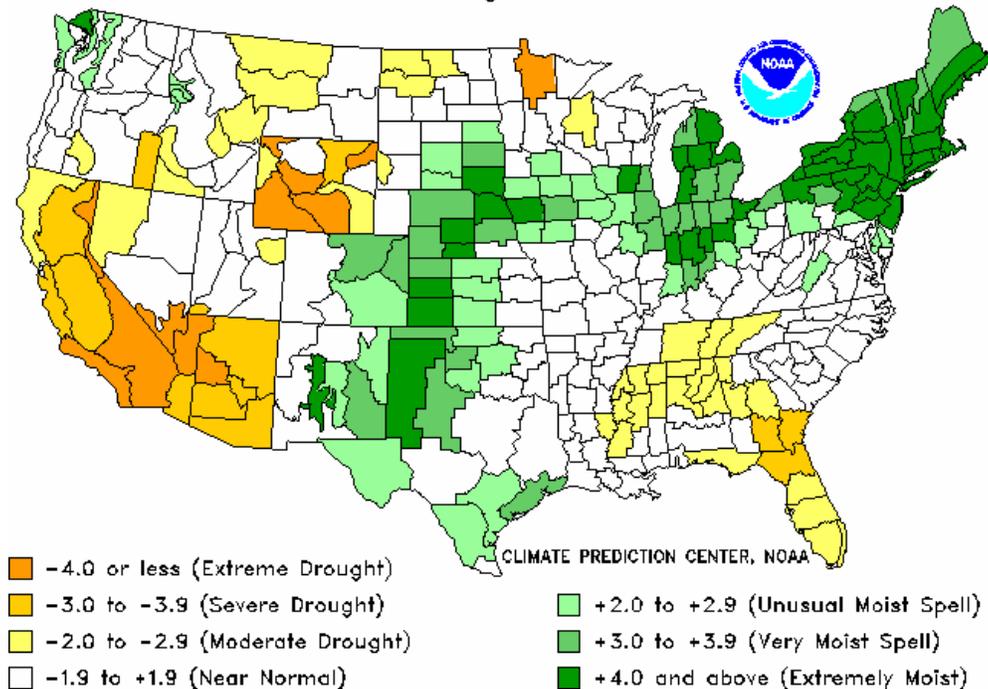


Released Thursday, April 26, 2007  
Author: David Miskus, JAWF/CPC/NOAA

## Drought Severity Index by Division

Weekly Value for Period Ending 28 APR 2007

Long Term Palmer



Information provided by the USGS, the Middle Atlantic River Forecast Center, and the National Weather Service.