Water Supply Outlook

(http://www.potomacriver.org/water_supply/status.htm)
April 12, 2004
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ICPRB, through its Section for Cooperative Water Supply Operations, 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 suppliers during droughts.

ICPRB outlook:

The method for estimating the probability of low flows in the upcoming reservoir release season was revised for 2004. The previous method used recent streamflow data to estimate the conditional probability of future low flows. In addition to recent streamflow, the updated method also uses recent precipitation, groundwater level measurements, and published drought indices as indicators of the current watershed state in order to estimate the conditional probability of future low flows. Tests of the revised method show it provides a more reliable indicator of conditional probability. A full report on the revised method is in preparation.

As of April 12, there is a 4- to 5-percent conditional probability that natural Potomac flow will drop below 600- to 700-million gallons per day (MGD) at Little Falls through December 31 of this year. Natural flow is that flow that would occur without upstream reservoir augmentation or withdrawals. Water supply releases from Jennings Randolph and Little Seneca Reservoirs occur when Potomac flow is less than expected Potomac water supply withdrawals.

Outlook for Potomac River at Little Falls – April 12, 2004

Natural flow (MGD)	*Historical probability of lower flow June 1 through December 31*[1]	*Conditional probability of lower flow June 1 through December 31*[2]
1200	67%	57%
1000	52%	37%
800	27%	11%
700 (water supply releases possible)	16%	5%
600 (water supply releases possible)	10%	4%

[1] The historical probability was calculated based on an examination of the historical streamflow record.

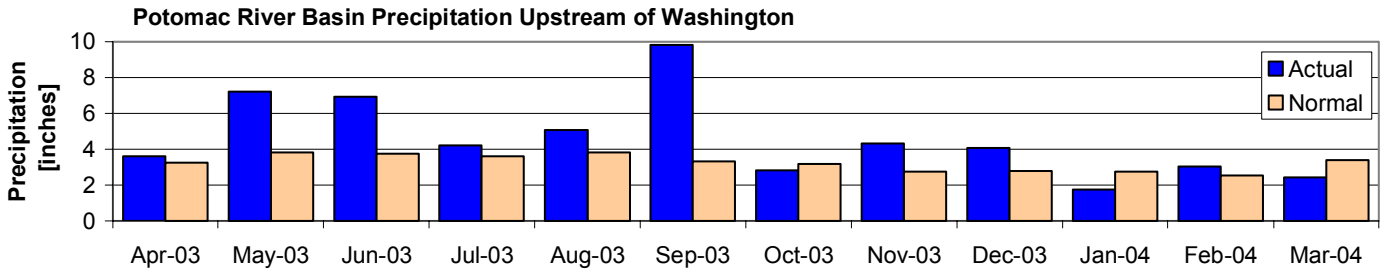
[2] The conditional probability was calculated based on the fact that in the Potomac, low-flow conditions are brought on by low antecedent precipitation combined with low soil moisture and low groundwater conditions, and also based on the knowledge that low-flows are persistent across seasons. Historical conditions most closely resembling recent conditions are weighted more heavily in the determination of conditional probability. While both historical and conditional probabilities are given for informational/comparison purposes, the conditional probability is considered the more reliable indicator.

Potomac River flow (view graph at http://www.potomacriver.org/water_supply/2004Flow.htm)

The Potomac flow is near median for this time of year. March daily flow averaged about 13.6 billion gallons per day, about 12 percent below the long-term average flow for the month (Source: USGS). Washington area water suppliers withdrew an average of about 374 MGD from the Potomac in March, about 2 percent more than March of last year.

Precipitation summary and long-term forecast:

The National Weather Service's Middle Atlantic River Forecast Center reports that as of March 31, 2004, precipitation in the Potomac basin upstream of Washington, D.C. has been 16.8 inches above average since April 1, 2003, for a total of 55.2 inches.



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

Reservoir Storage:

Facility	Percent Full	Current usable storage, bg	Total usable storage, bg
WSSC's Patuxent reservoirs:	86	7.8	9.1
FCWA's Occoquan reservoir:	100	8.1	8.1
Little Seneca Reservoir	100	3.8	3.8
Jennings Randolph water supply account	100	13.4	13.4
Jennings Randolph water quality account	100	16.6	16.6
Savage Reservoir	100	6.3	6.3

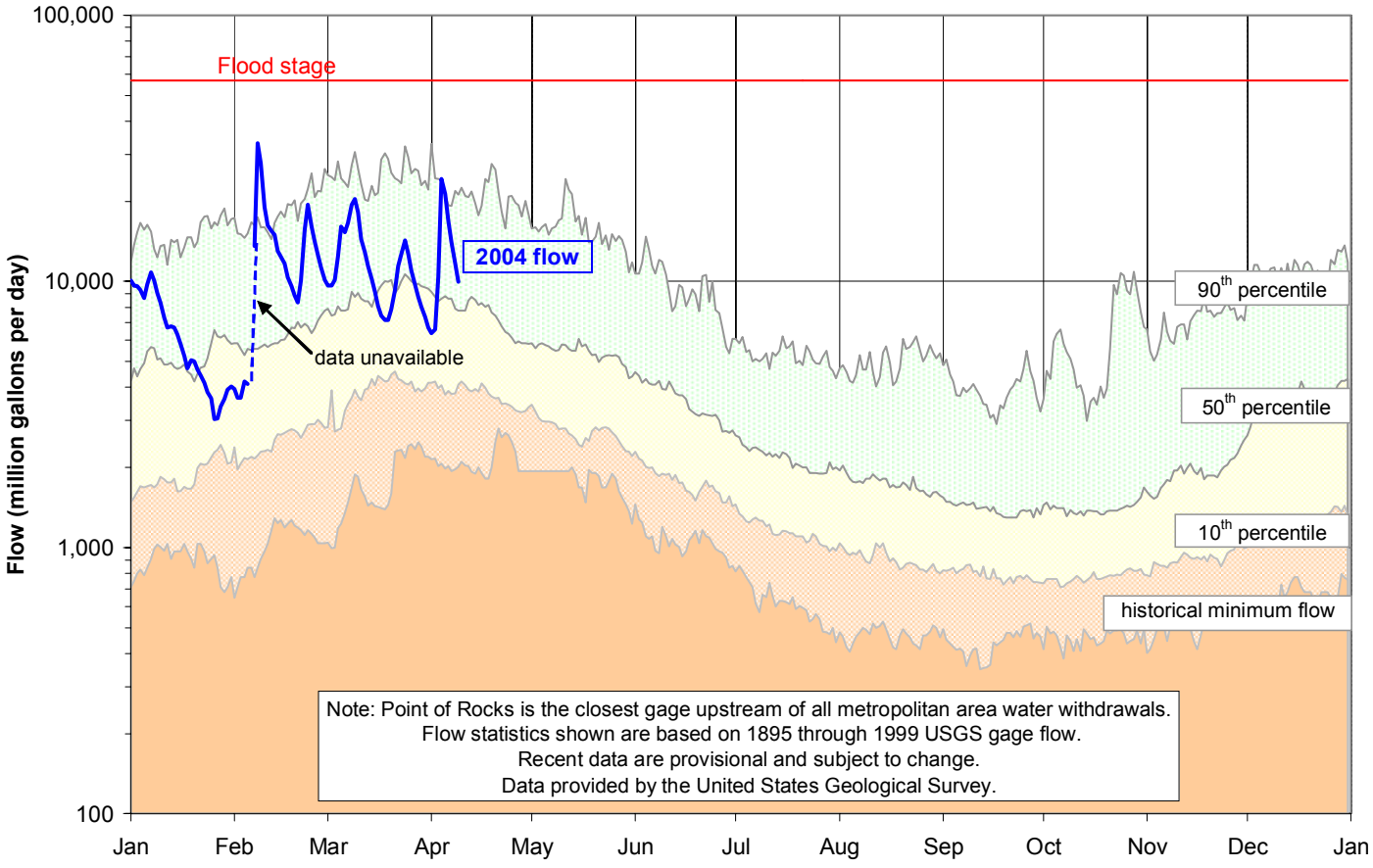
Drought Monitor, Soil moisture, and Groundwater:
Monitoring wells show that groundwater levels are generally at normal or above-normal levels throughout the basin (Data Source: USGS). The current NOAA Drought Monitor shows non-drought conditions in the basin, and the Palmer Drought Severity Index shows conditions varying from unusually to extremely moist.

Drought Status:
The Metropolitan Washington Council of Government's Drought Awareness Response Plan status is "Normal."

Environmental Flow-by
Average Potomac flow at Little Falls in March was about 136 times the minimum flow recommendation of 100 mgd.

Management conclusions:
Generally, Jennings Randolph and Little Seneca reservoir releases would be triggered by low flows brought about by a combination of low summer rainfall combined with low groundwater levels. Groundwater levels in the basin are at normal levels, and the probability of reservoir releases this summer is slight. The metro area is well protected from a water supply shortage in the event of a drought.

Flow on the Potomac River at Point of Rocks 2004, and historical percentiles



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