

Maryland's Drought Monitoring and Response Plan

COG Workshop
April 4, 2013

Maryland Statewide Water Conservation Advisory Committee

Final Report November 2000

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Chairman

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Lieutenant Governor

<http://www.mde.state.md.us/programs/Water/DroughtInformation/Pages/Water/drought/index.aspx>

Defining Drought

“a period of time when natural or manmade water systems do not provide enough water to meet established human and environmental uses because of natural shortfalls in precipitation and stream flow”

Maryland's Drought Indicators

- Rainfall Deficit
- Stream Flow
- Ground Water Levels
- Reservoir Levels

Stages of Drought

- NORMAL
- WATCH
- WARNING
- EMERGENCY

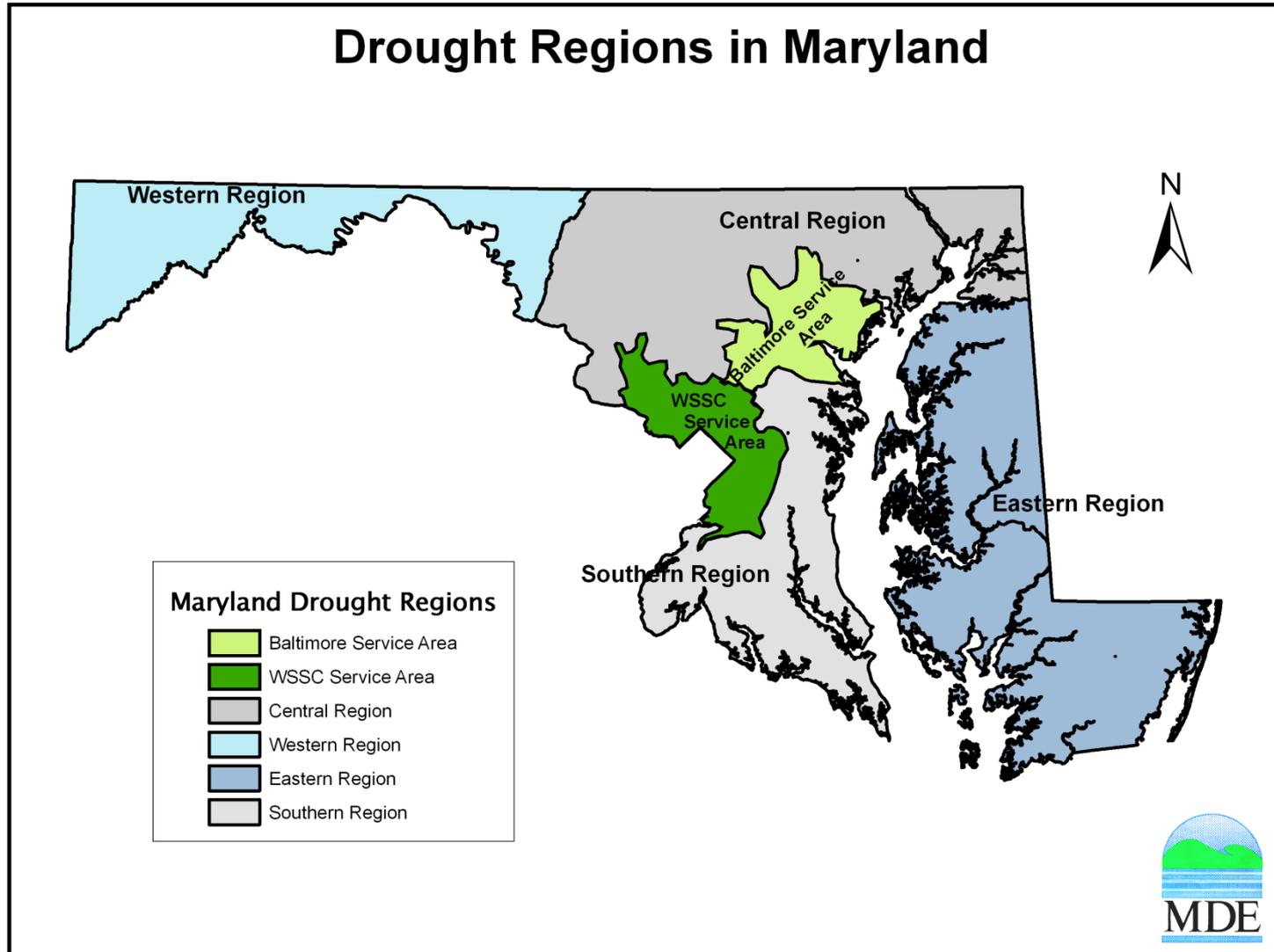
Response by Stage

- Promote Water Conservation
- 5%-10% Reduction in Water Use
- 10%-15 % Reduction in Water Use
- 15% - 20% Reduction in Water Use

Drought Triggers

- Precipitation - % of long term average by region
- Stream Flow and Groundwater levels – 25th, 10th, 5th percentiles for time period
- Reservoir levels – 120, 90 and 60 days of storage

Drought Regions in Maryland

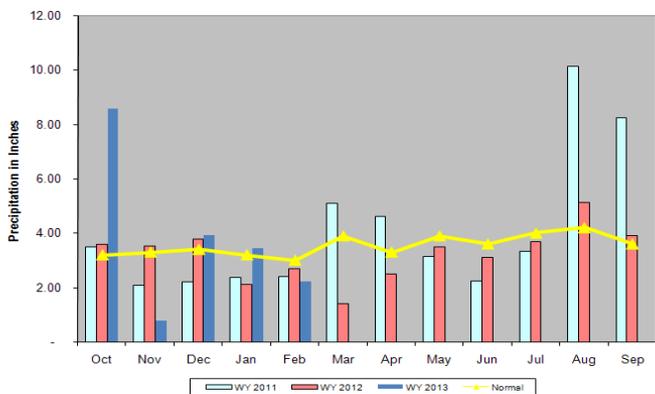




Precipitation Indicators for Maryland Drought Regions						
February 28, 2013						
Regions	Since Nov 30, 2013		WY to Date		Since Feb 28, 2012	
	Percent of Normal	Condition	Percent of Normal	Condition	Percent of Normal	Condition
Western	97%	Normal	96%	Normal	93%	Normal
Central	107%	Normal	128%	Normal	106%	Normal
Eastern	102%	Normal	121%	Normal	101%	Normal
Southern	93%	Normal	111%	Normal	88%	Normal

WY or Water Year begins on October 1

Statewide Average Monthly Precipitation Totals for Water Years 2011, 2012 and 2013



Data downloaded from <http://www.erh.noaa.gov/marfc/Precipitation/Departures/>

Cumulative Precipitation - Departure From Normal Since September 30, 2011

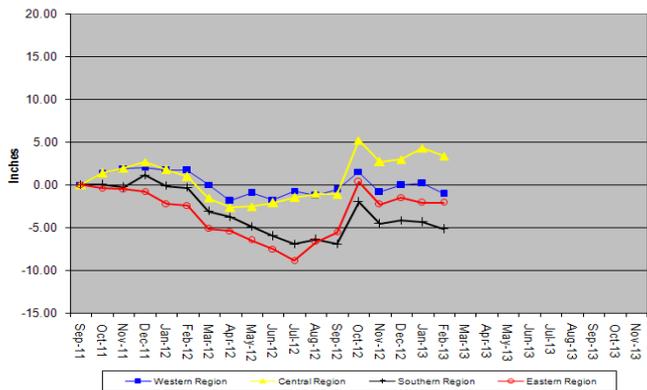
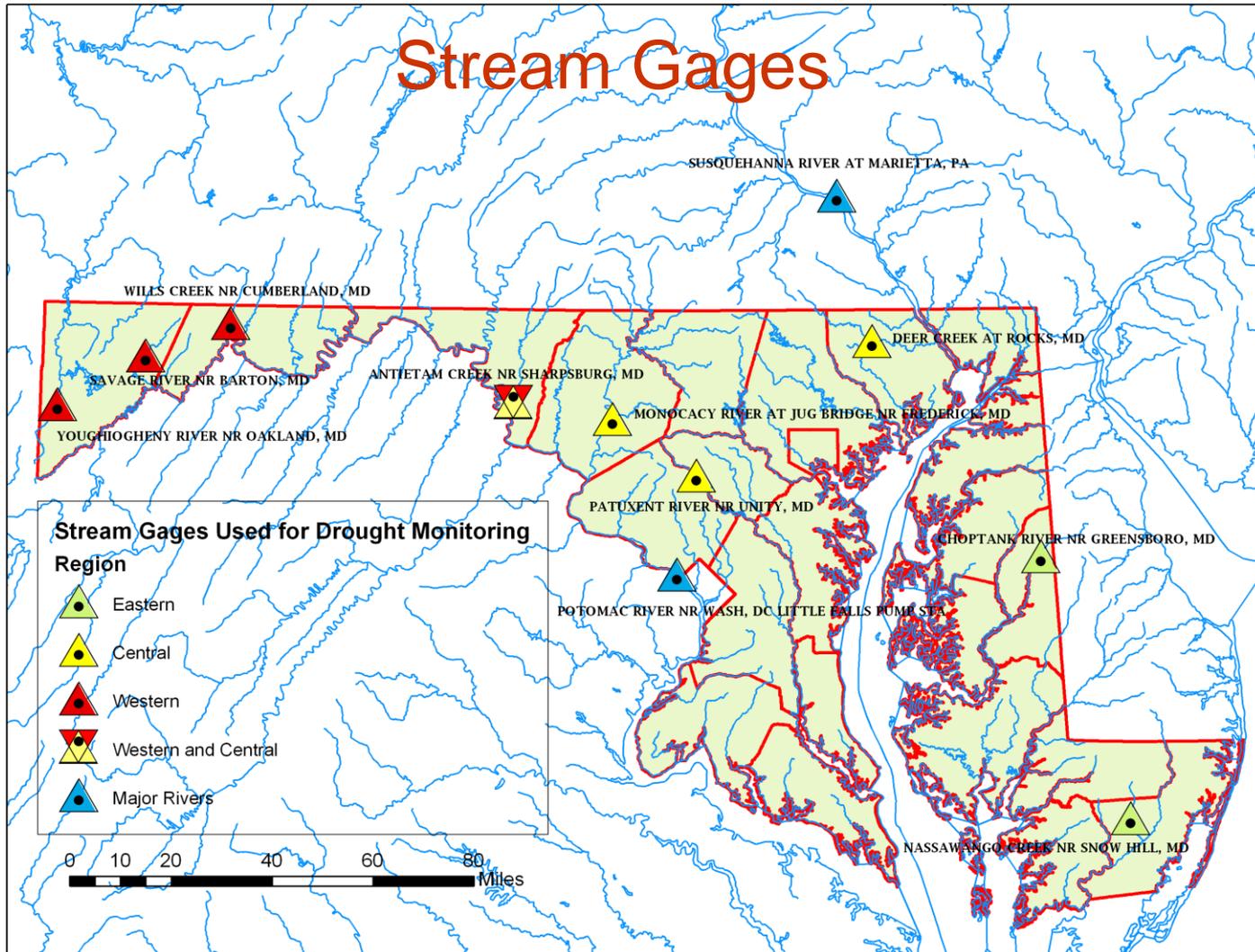


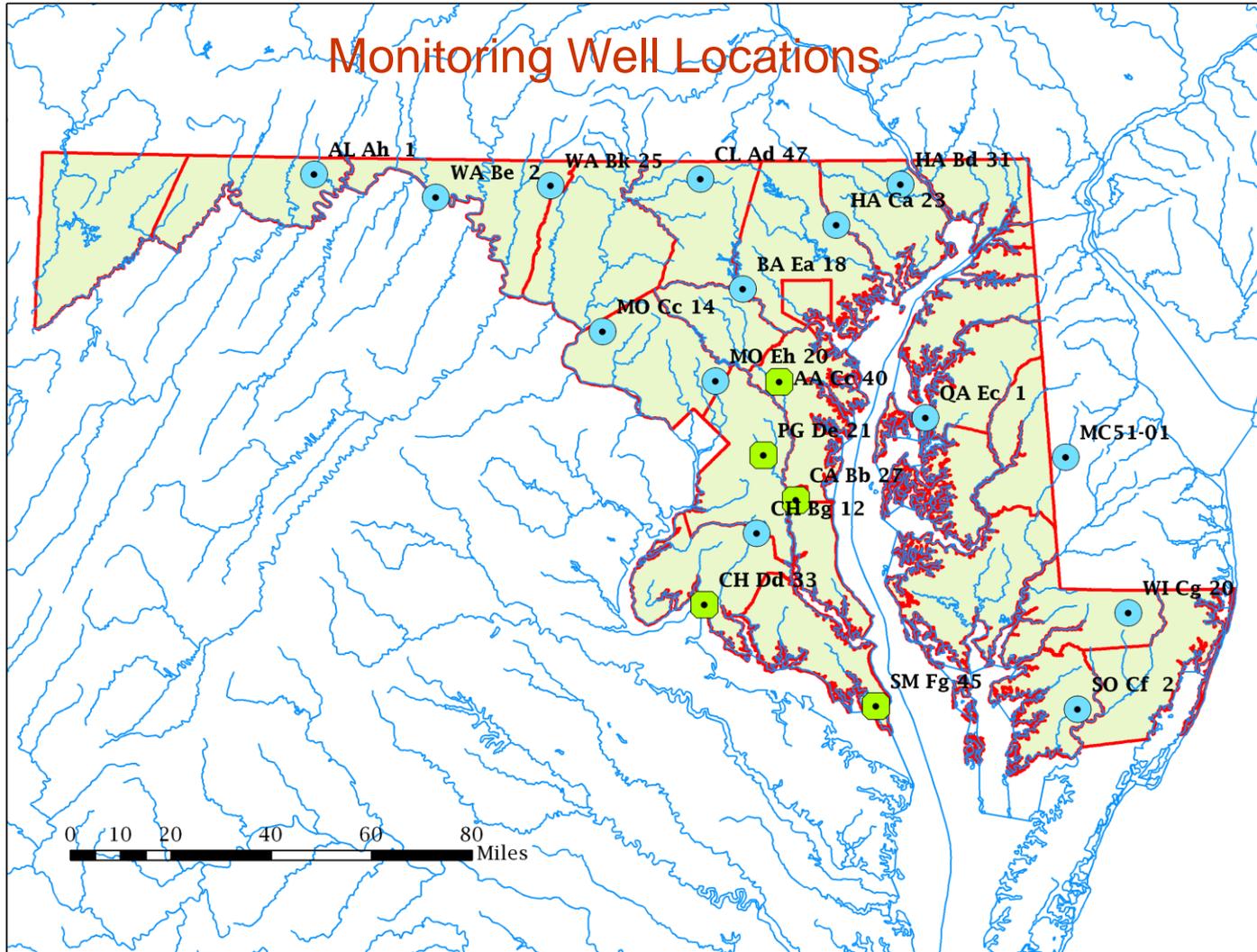
TABLE 2

Precipitation Triggers				
Number of Months Analyzed	Normal (% of Normal Precipitation)	Watch (% of Normal Precipitation)	Warning (% of Normal Precipitation)	Emergency (% of Normal Precipitation)
3	>75.0	75.0	65.0	55.0
4	>80.0	80.0	70.0	60.0
5	>80.0	80.0	70.0	60.0
6	>80.0	80.0	70.0	60.0
7	>81.5	81.5	71.5	61.5
8	>82.5	82.5	72.5	62.5
9	>83.5	83.5	73.5	63.5
10	>85.0	85.0	75.0	65.0
11	>85.0	85.0	75.0	65.0
12	>85.0	85.0	75.0	65.0



Stream Gages





Reservoir Volumes and Storage for Drought Monitoring

For the End of February 2013

<i>Water System</i>	<i>Reservoir</i>	<i>Percent Full*</i>	<i>Days of Storage**</i>
City of Frostburg	Piney	99%	697
City of Cumberland	Lake Gordon	100%	393
	Lake Koon	100%	
City of Baltimore	Liberty	100%	347
	Loch Raven	100%	
	Prettyboy	100%	
	Total	100%	
WSSC	Tridelphia Reservoir	92%	205
	Rocky Gorge/Duckett		
	Seneca Creek Reserve	100%	NA
All Potomac River Plants	Jennings-Randolph Reserve***	100%	NA

* *Percent Full* is the ratio of current volume to the maximum usable volume in each reservoir as of the end of February 2013

** *Days of Storage* is the amount of days it would take to use current volume of reservoir (w/o recharge) based on average raw water withdrawals from similar time frame from previous three years.

*** Percent full for Jennings-Randolph Reservoir is based on allotted amount of water in reservoir used to supplement Potomac River flow for drinking water purposes.

Overall Hydrologic Status for Maryland

Summary of Hydrologic Indicators for 28-Feb-2013					
	Rainfall	Stream Flow	Groundwater	Reservoirs	Overall Status
Western	Normal	Normal	Normal	Normal	Normal
Central	Normal	Normal	Normal	Normal	Normal
Eastern	Normal	Normal	Normal		Normal
Southern	Normal		Normal		Normal



Maryland Department of the Environment

**For questions/comments
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