

# Montana Water Supply and Moisture Status by County - June 2016



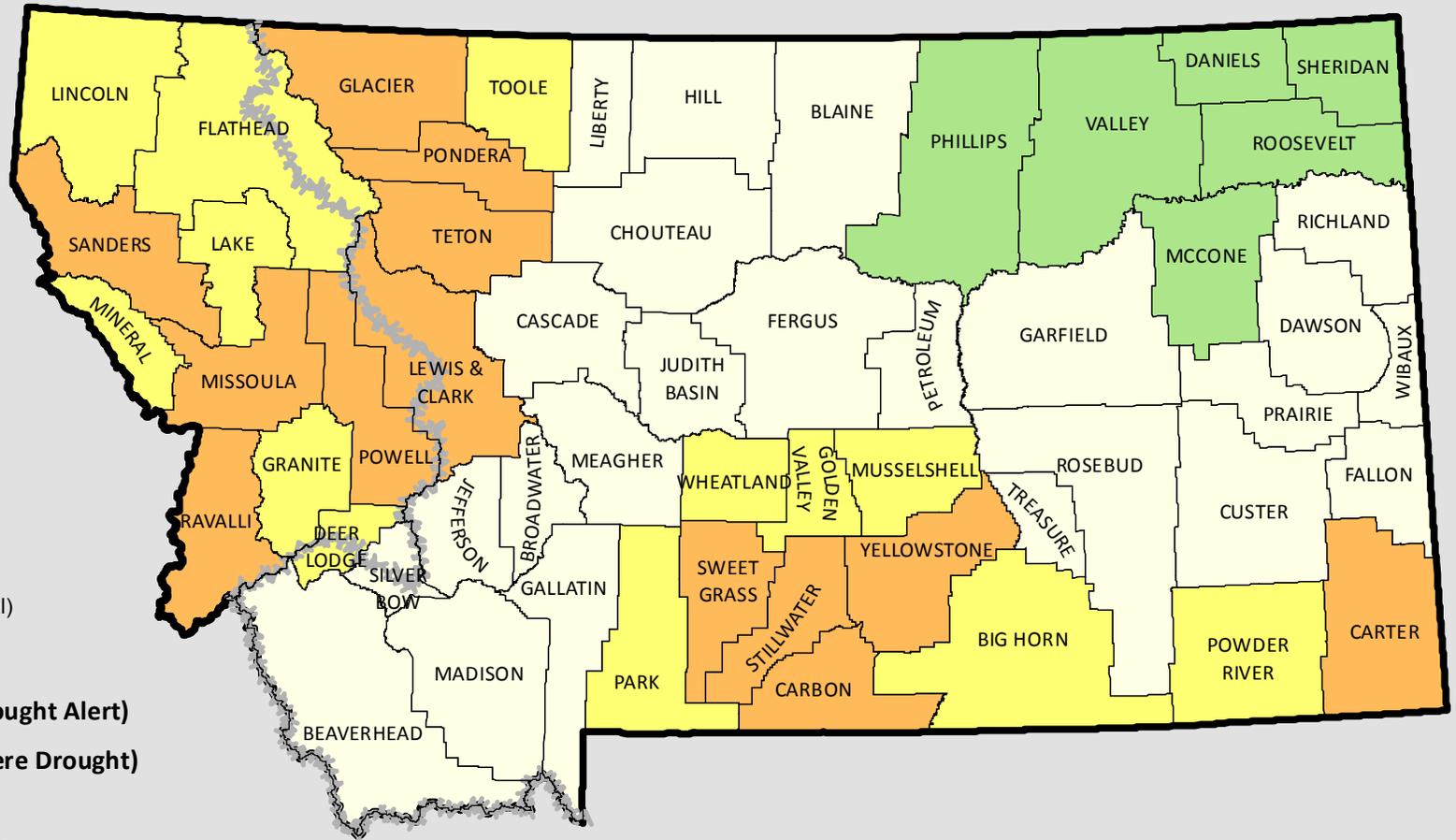
<http://drought.mt.gov>

## Map Key

Continental Divide

## Moisture Status

- Extremely Moist
- Moderately Moist
- Slightly Moist
- Near Average (Normal)
- Slightly Dry
- Moderately Dry (**Drought Alert**)
- Extremely Dry (**Severe Drought**)



**Drought Alert** - Governor's Drought Advisory Committee strongly encourages local officials to convene local drought committees.

**Severe Drought** - Local officials should have local drought planning efforts underway or should reconvene the local drought committee at the earliest opportunity. For recommended responses, see the Montana Drought Plan

Map created June 30, 2016

This map was created using the US Drought Monitor and the monthly NRCS Surface Water Supply Index (SWSI) as a guide. In general, a county was assigned a Moisture Status based on the highest drought category intersecting any part of the county. The map was then compared to the monthly SWSI, PRISM, and other precipitation products. The Montana Governor's Drought and Water Supply Advisory Committee, made up of experts from the National Weather Service, the Natural Resource Conservation Service, the Farm Service Agency, United States Department of Agriculture, the Montana Department of Natural Resources and Conservation, the Montana State Library, and the Montana Bureau of Mines and Geology, reviewed the map.



<http://nris.mt.gov/drought>

# RECLAMATION

*Managing Water in the West*

## River and Reservoir

## Status Briefing

### RESERVOIR AND RIVER OPERATIONS

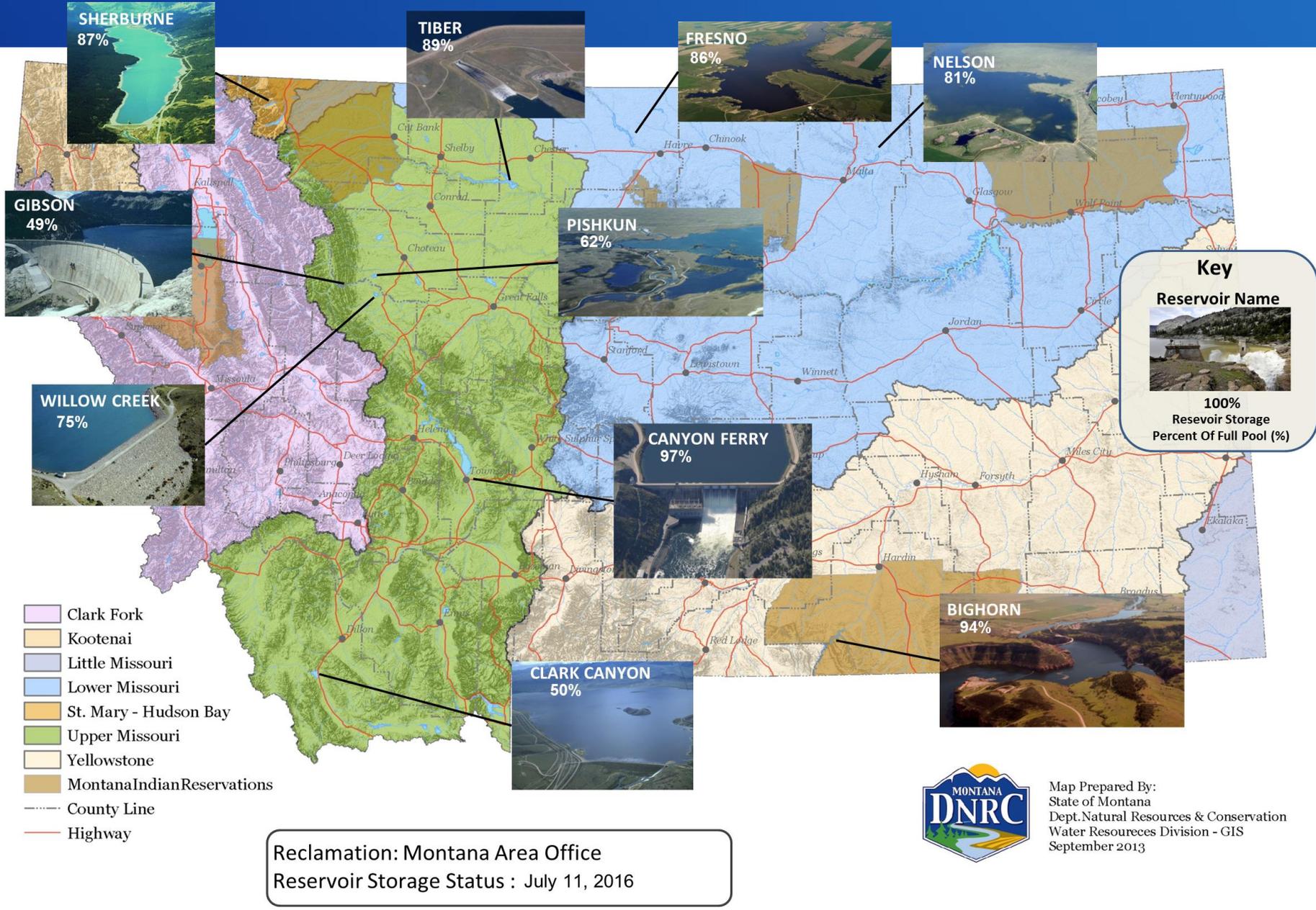
Montana Area Office

Billings

July 12, 2016

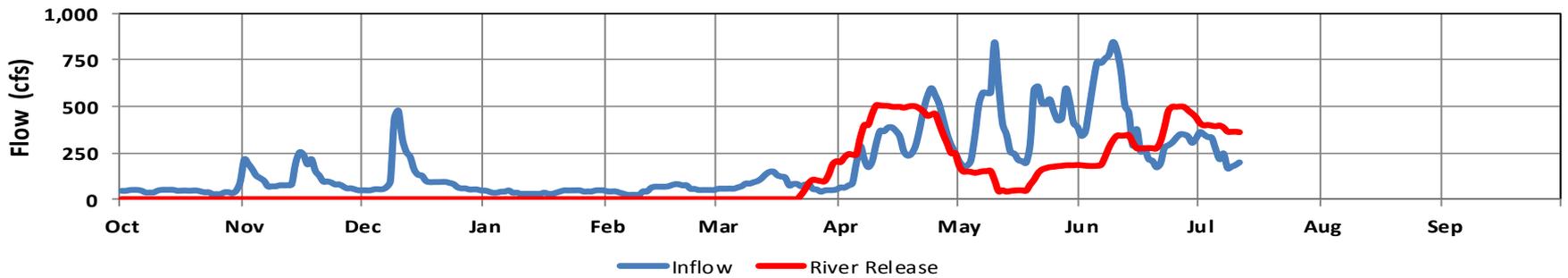
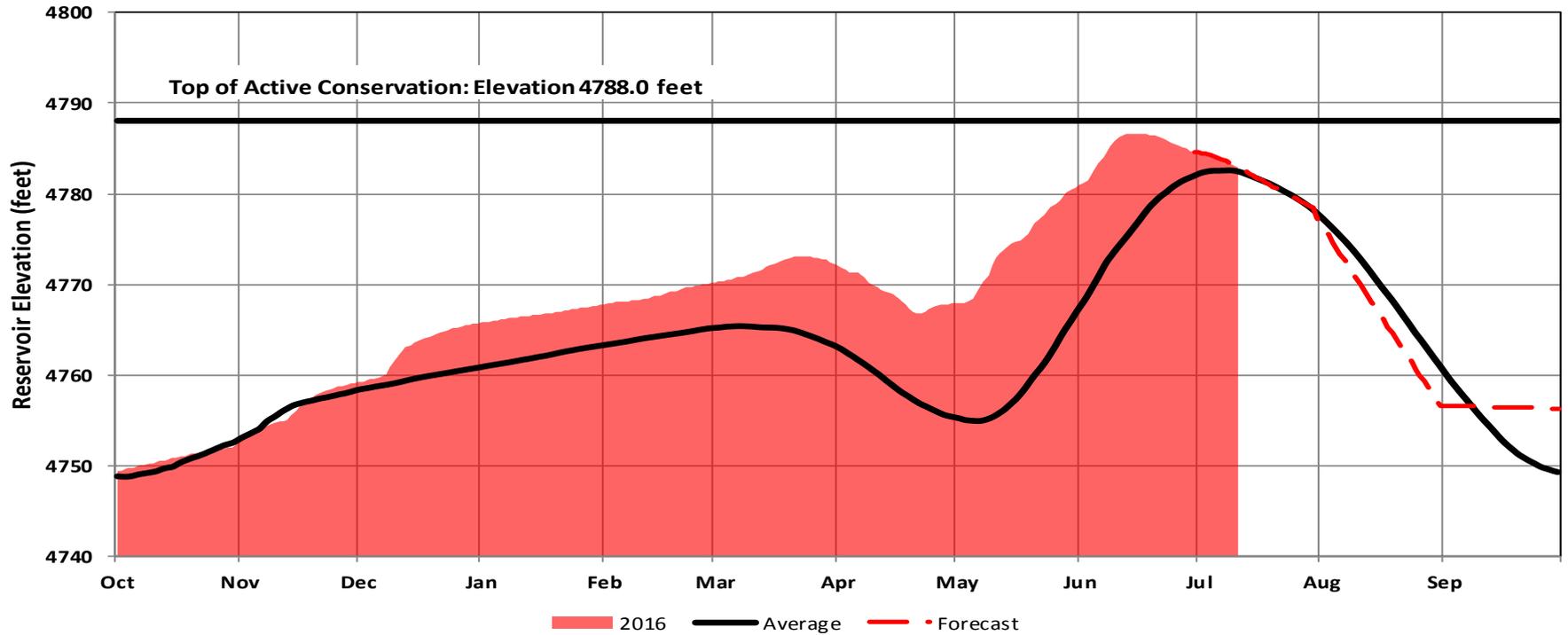


U.S. Department of the Interior  
Bureau of Reclamation



# RECLAMATION

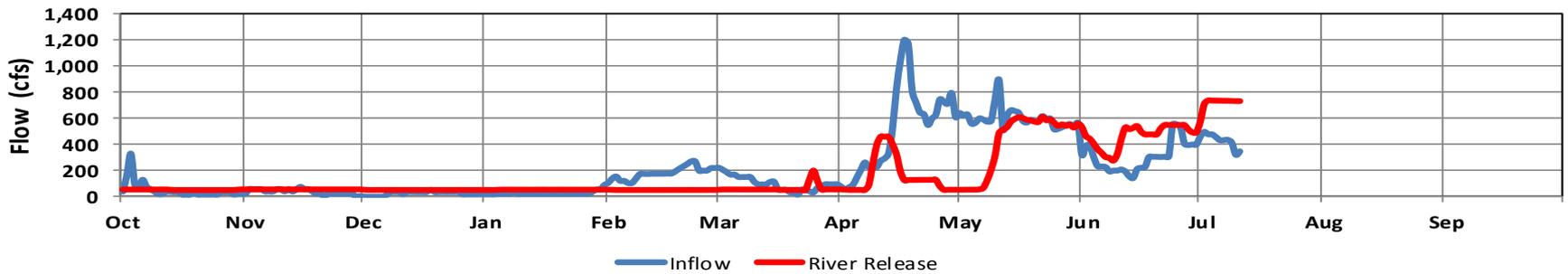
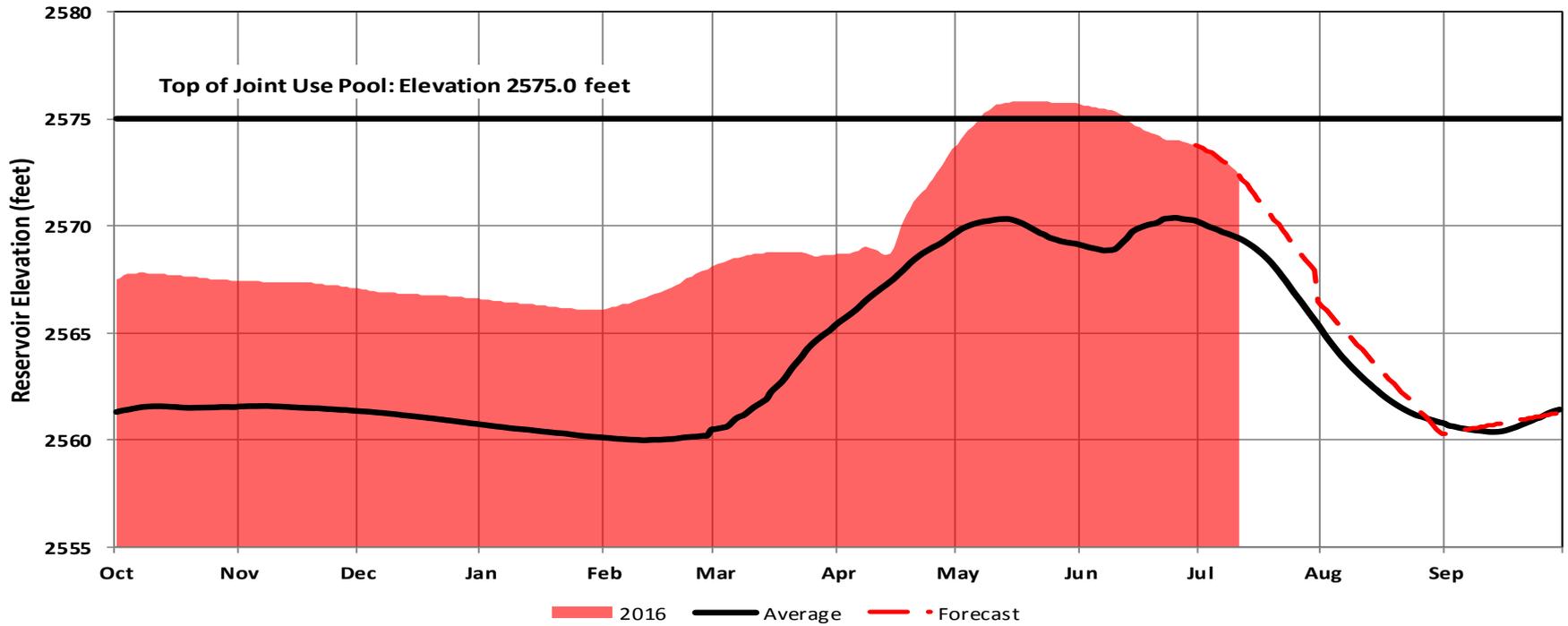
# Lake Sherburne Operations



87% of full pool

# RECLAMATION

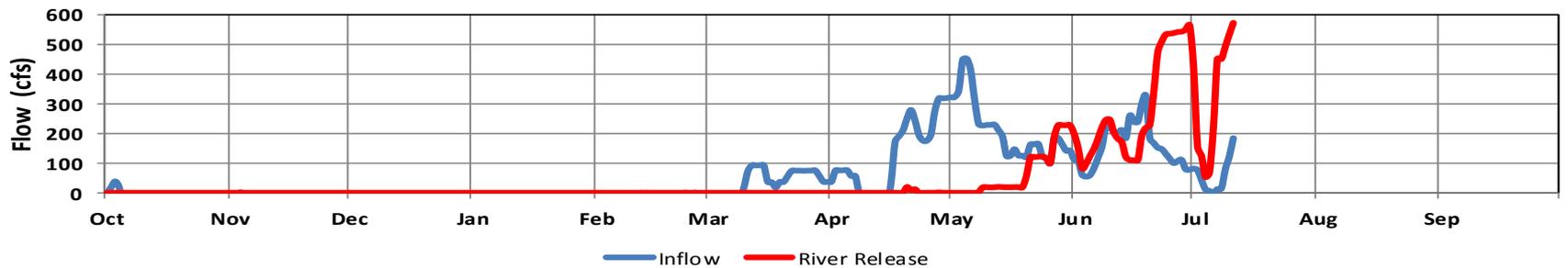
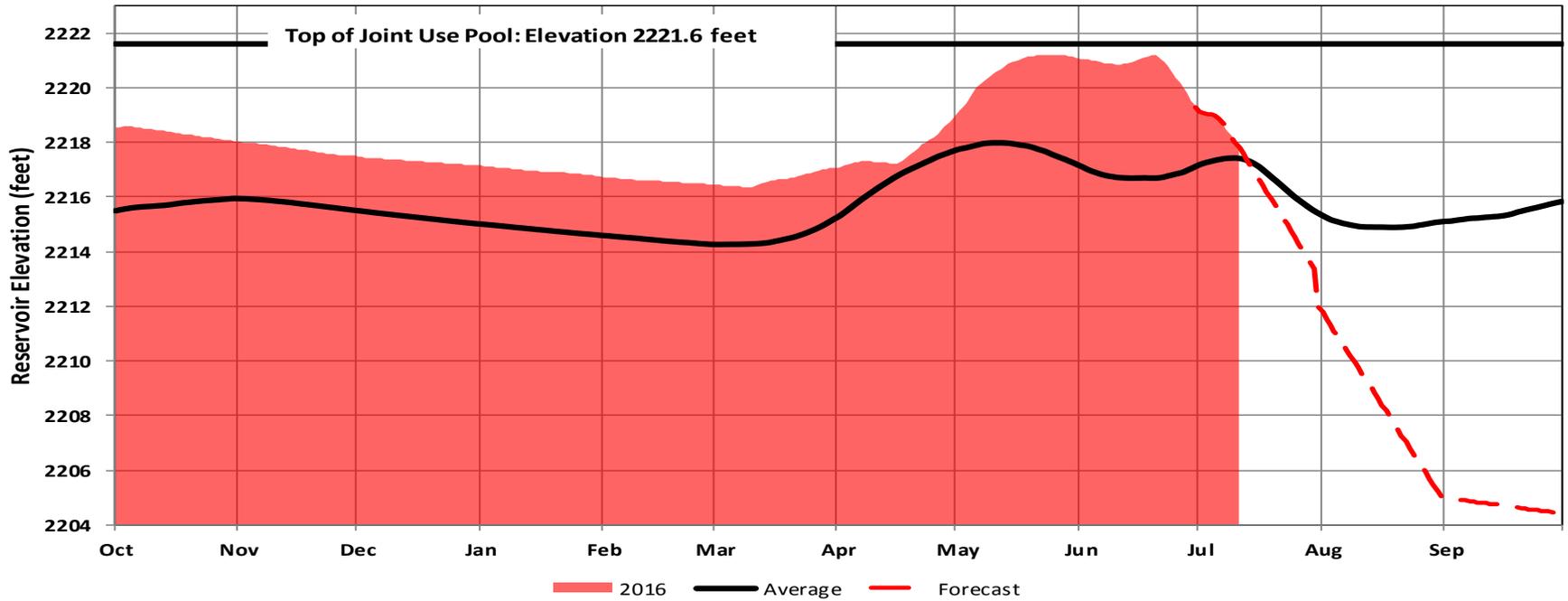
# Fresno Reservoir Operations



86% of full pool

RECLAMATION

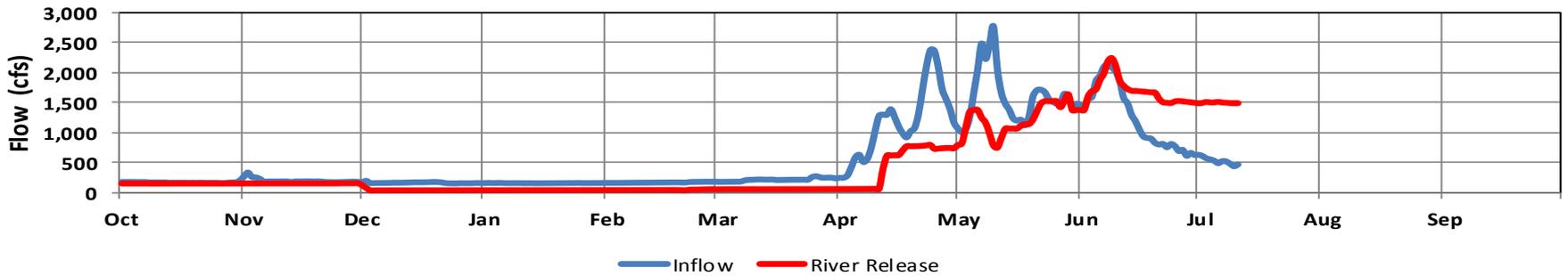
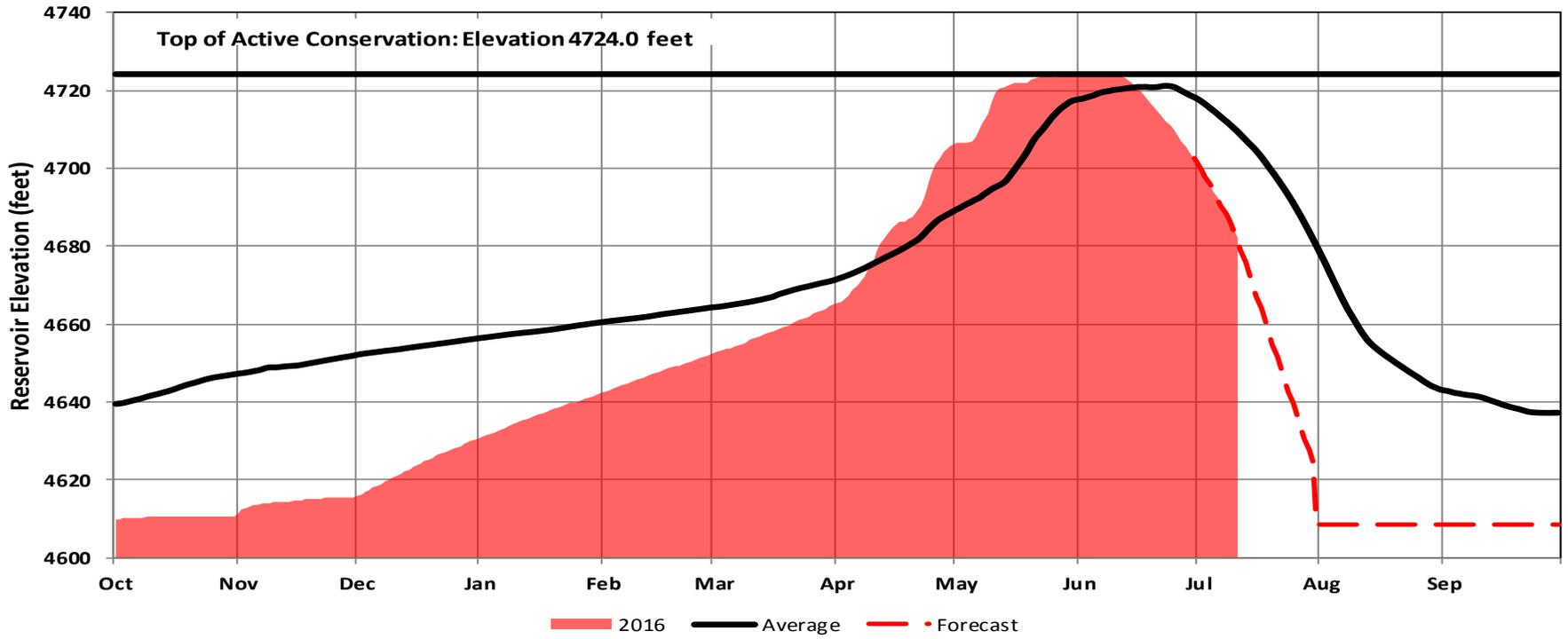
# Nelson Reservoir Operations



80% of full pool  
Shortage of irrigation water supply  
Construction in the fall

# RECLAMATION

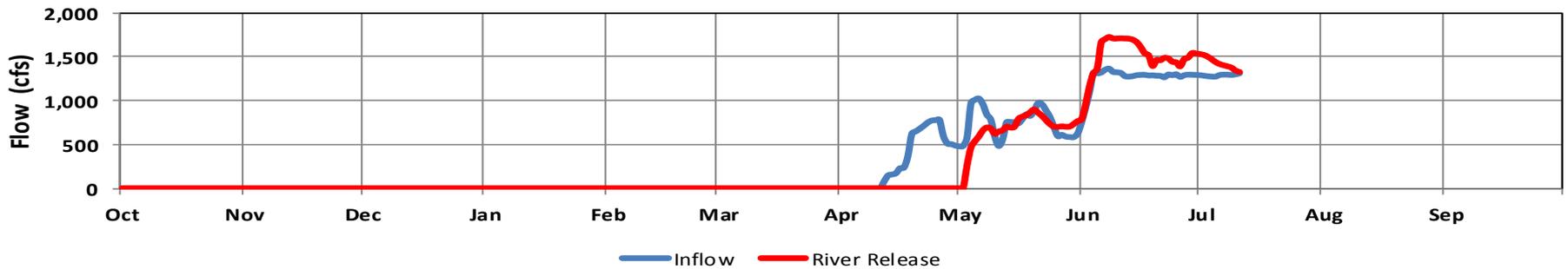
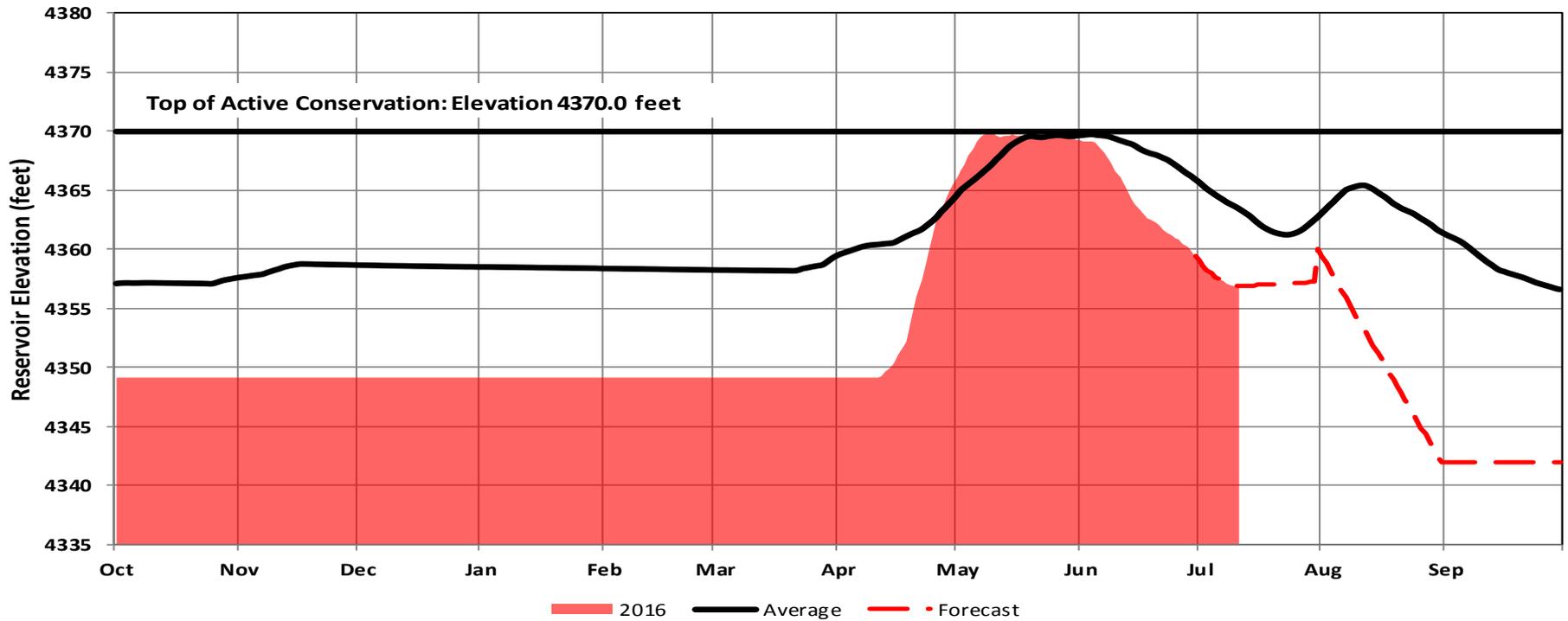
# Gibson Reservoir Operations



50% of full pool  
Minimum pool near August 1st

RECLAMATION

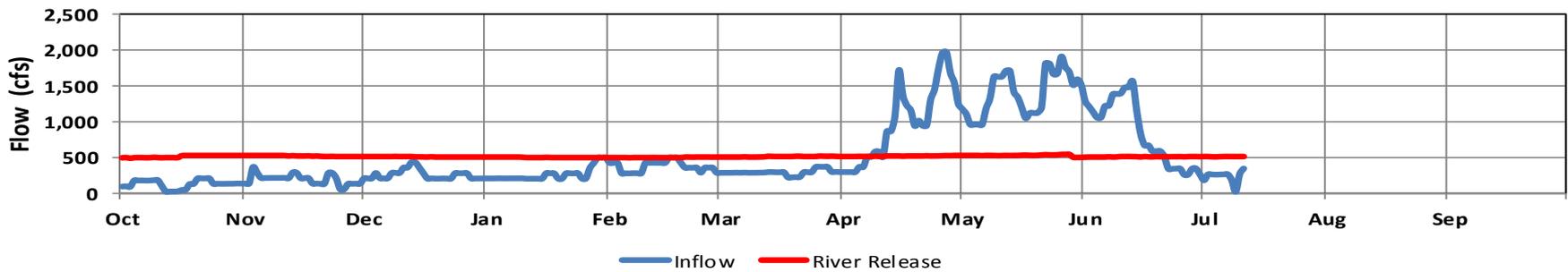
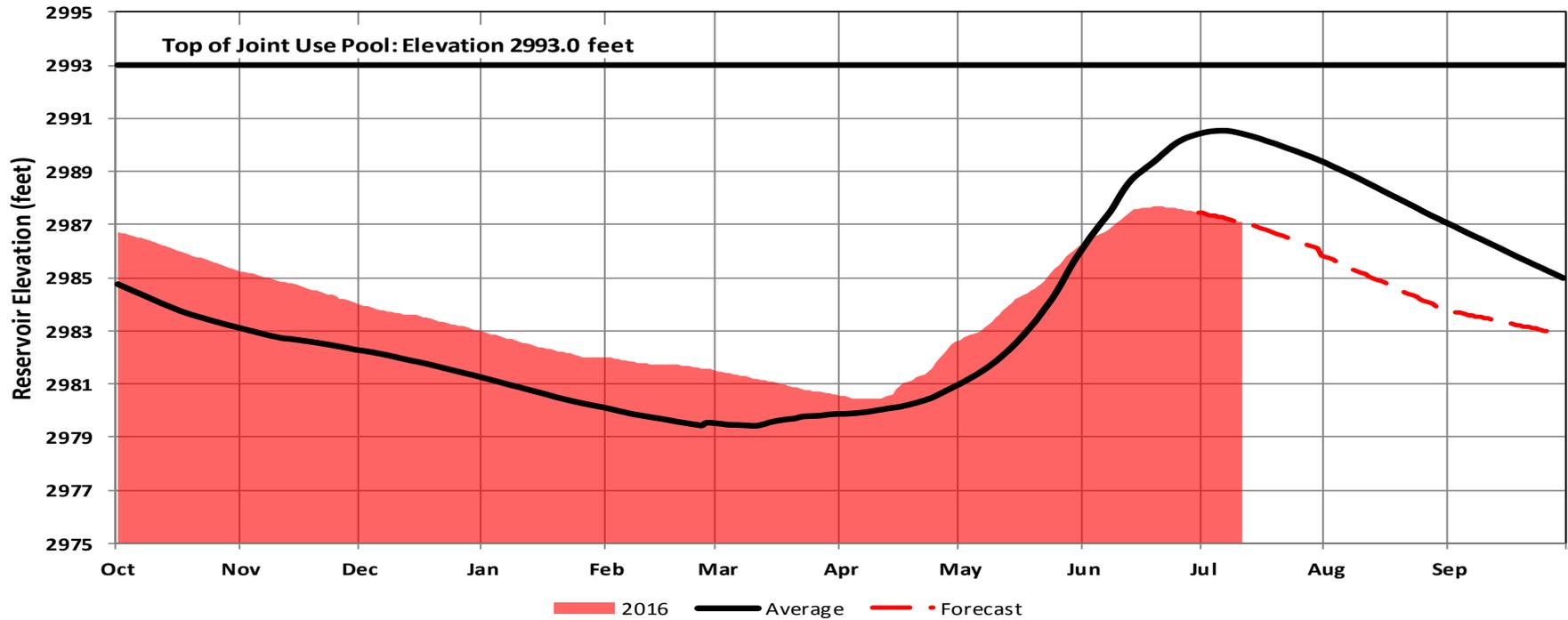
# Pishkun Reservoir Operations



62% of full pool  
Early Irrigation Shutdown

# RECLAMATION

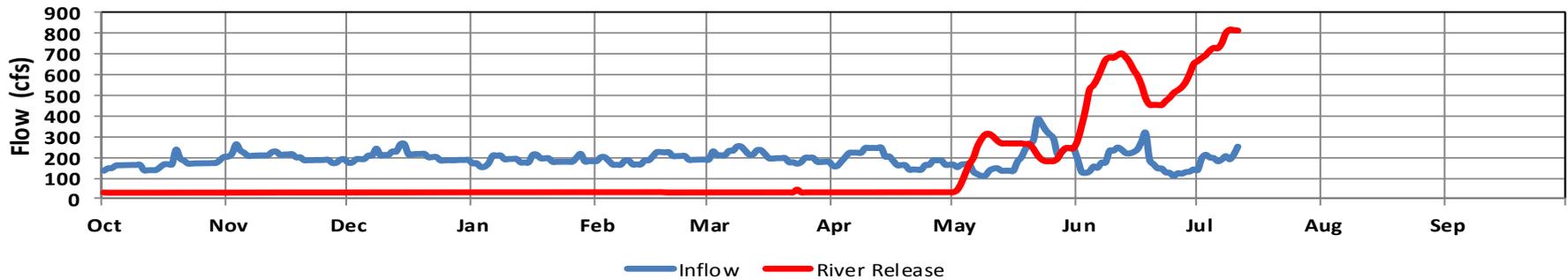
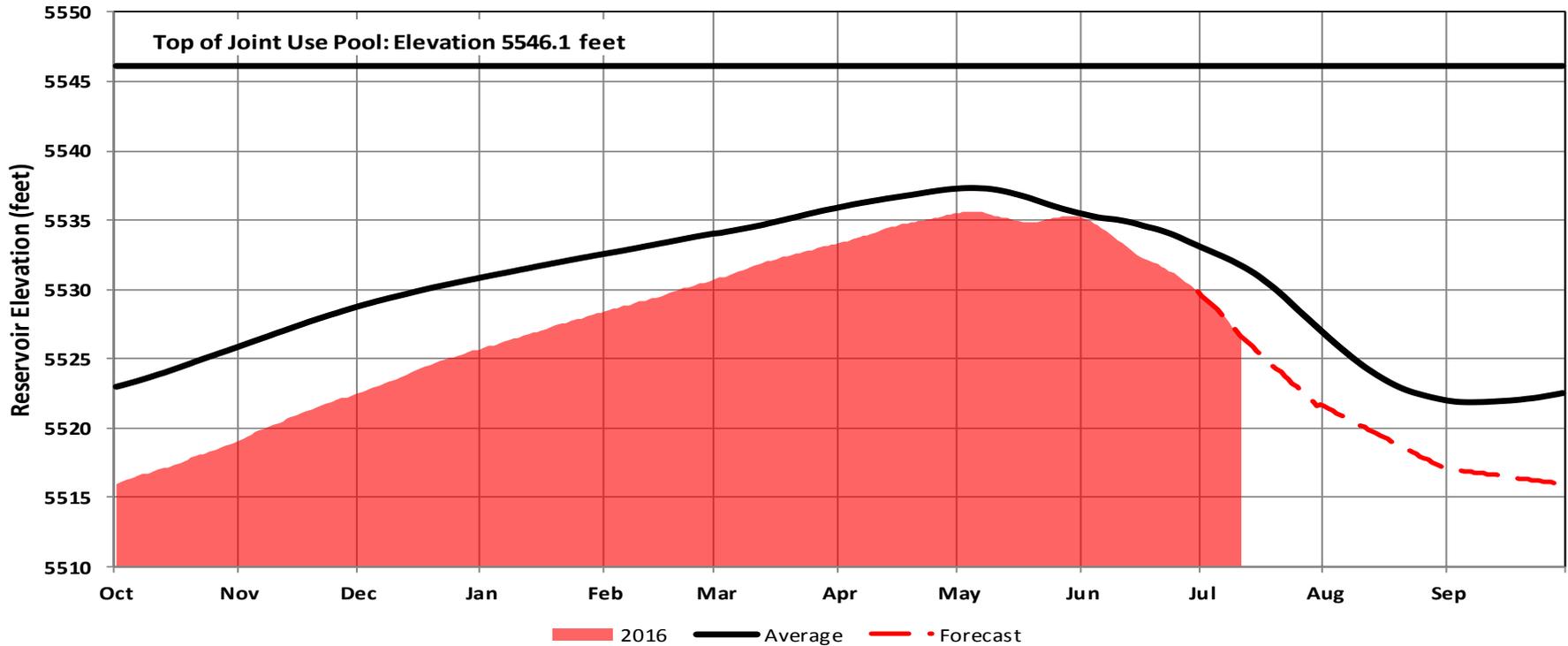
# Lake Elwell (Tiber Dam) Operations



89% of full pool  
Minimum irrigation requirements

RECLAMATION

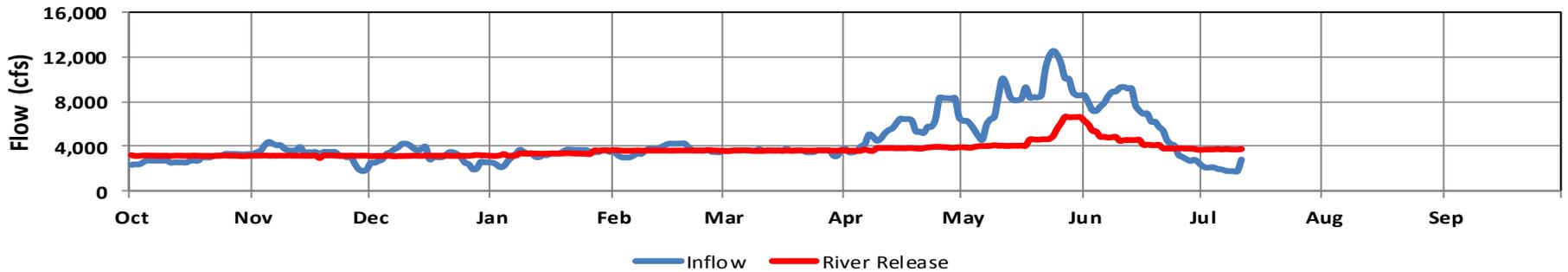
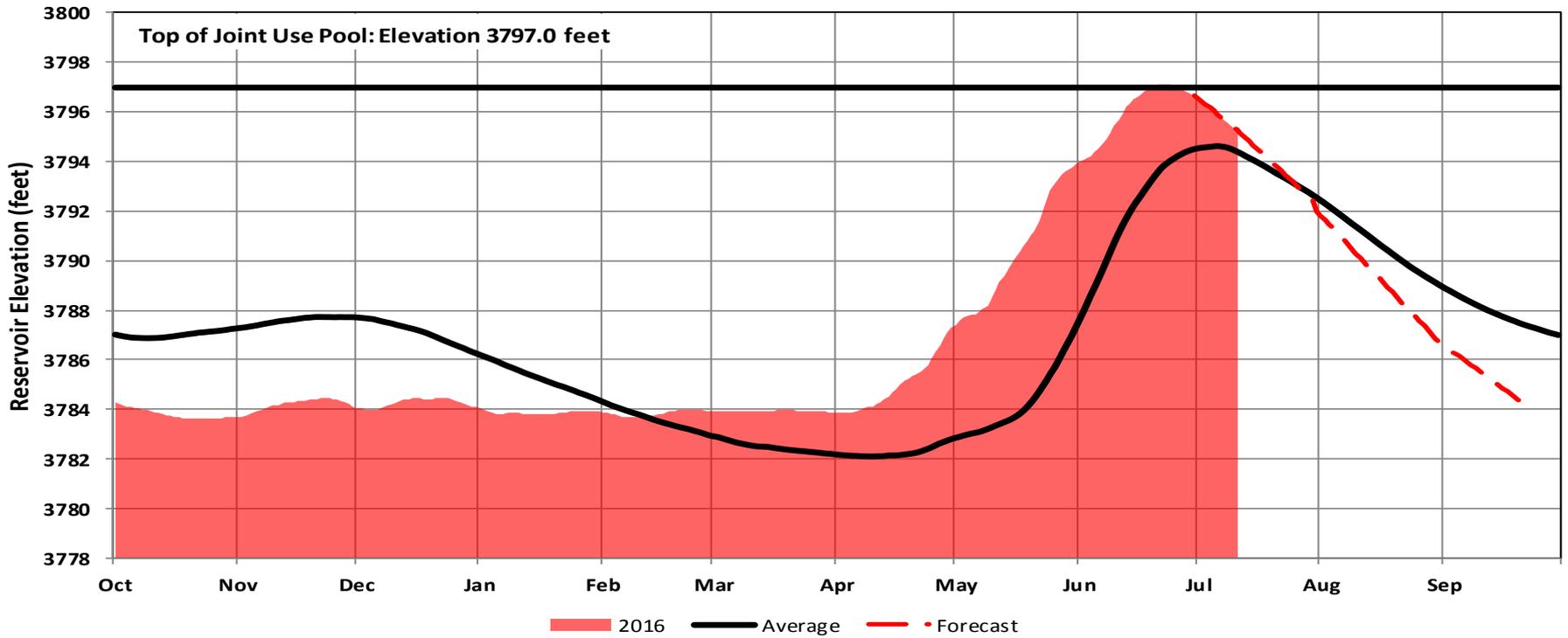
# Clark Canyon Reservoir Operations



50% of full pool  
Shortage of irrigation water supply

RECLAMATION

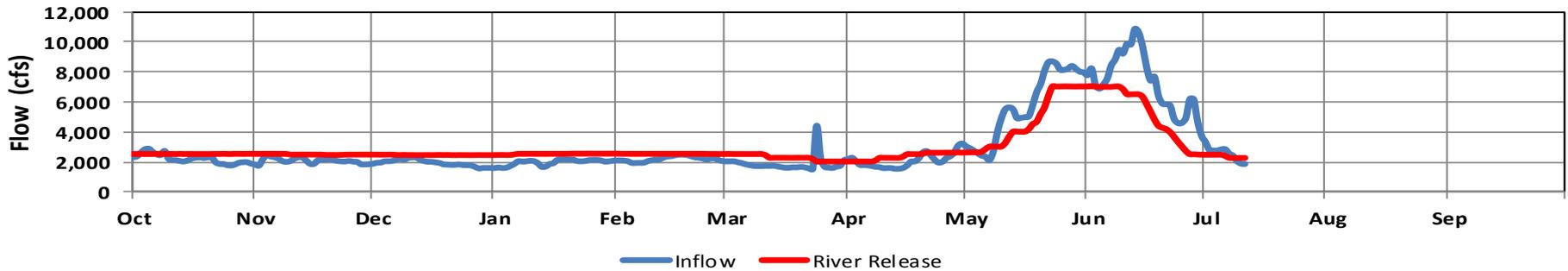
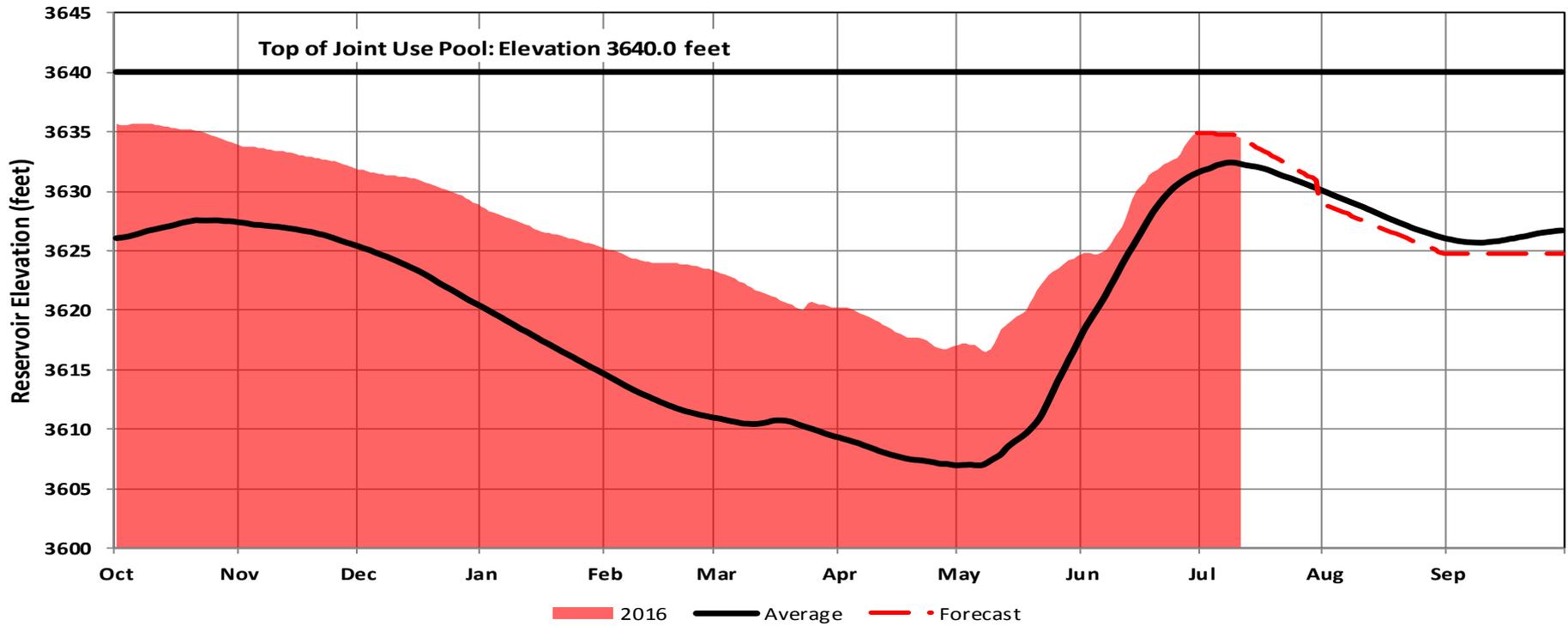
# Canyon Ferry Reservoir Operations



97% of full pool  
Desirable river release levels

RECLAMATION

# Bighorn Lake (Yellowtail Dam) Operations



94% of full pool

Desirable river release levels

RECLAMATION

# Summary of Conditions

- **Reduced Irrigation Allotments**

  - East Bench & Clark Canyon Company

  - Greenfield Irrigation District

    - Irrigation done early-mid Aug. due to lack of water supply

  - Milk River Project

- **Future Projections**

  - Gibson Reservoir at minimum elevation near Aug 1<sup>st</sup>

  - Sun River fishery flows may be below desired targets

# Reclamation's Internet Website

<http://www.usbr.gov/gp/hydromet/>

- near real-time data available through the HYDROMET data system
- summaries and plots of historical data
- annual reservoir operating plan publication
- monthly water supply reports
- project data
- snow plots
- links to related internet sites

RECLAMATION

# RECLAMATION

*Managing Water in the West*

## 2016 Operations for Hungry Horse and Lake Como

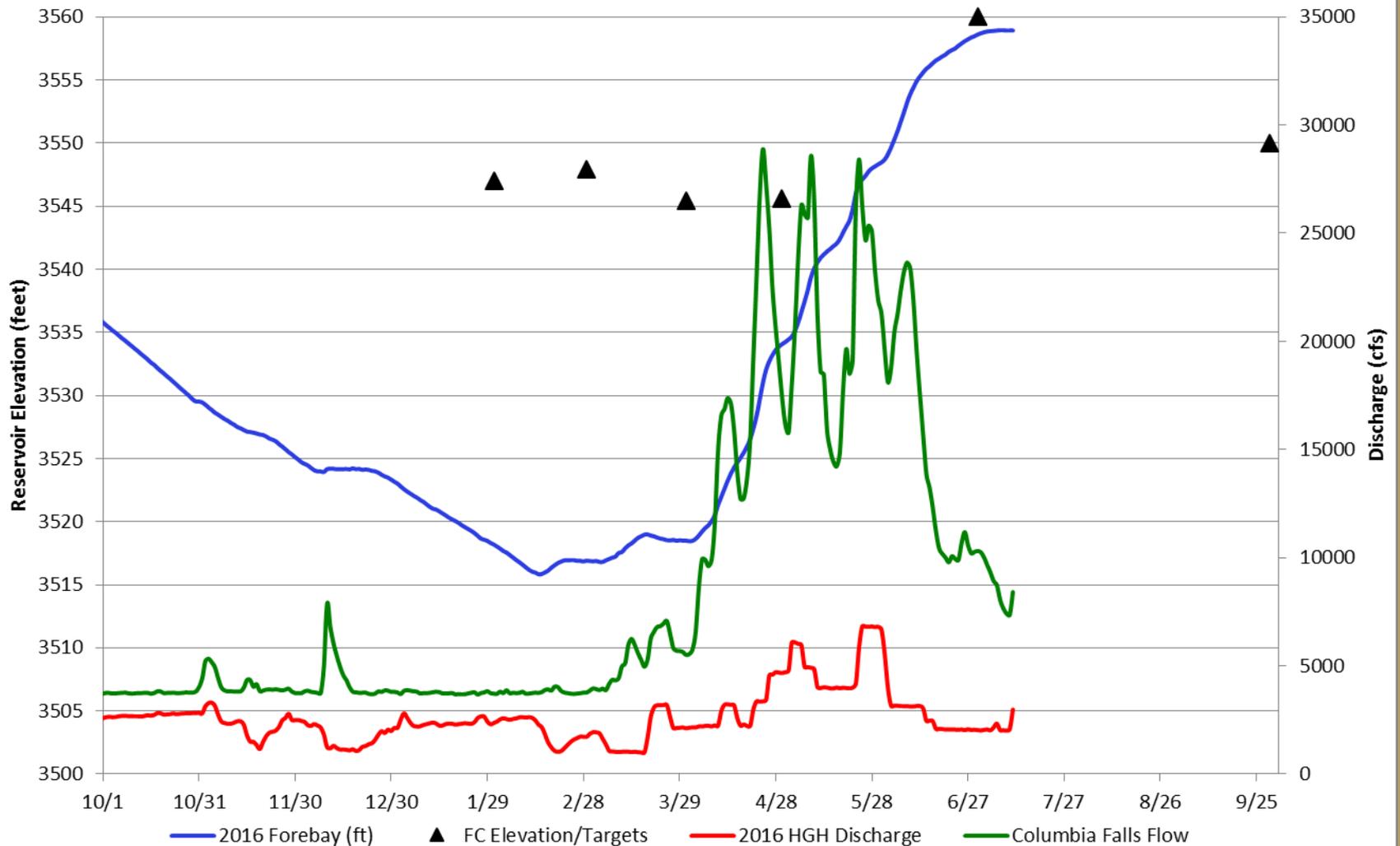


U.S. Department of the Interior  
Bureau of Reclamation

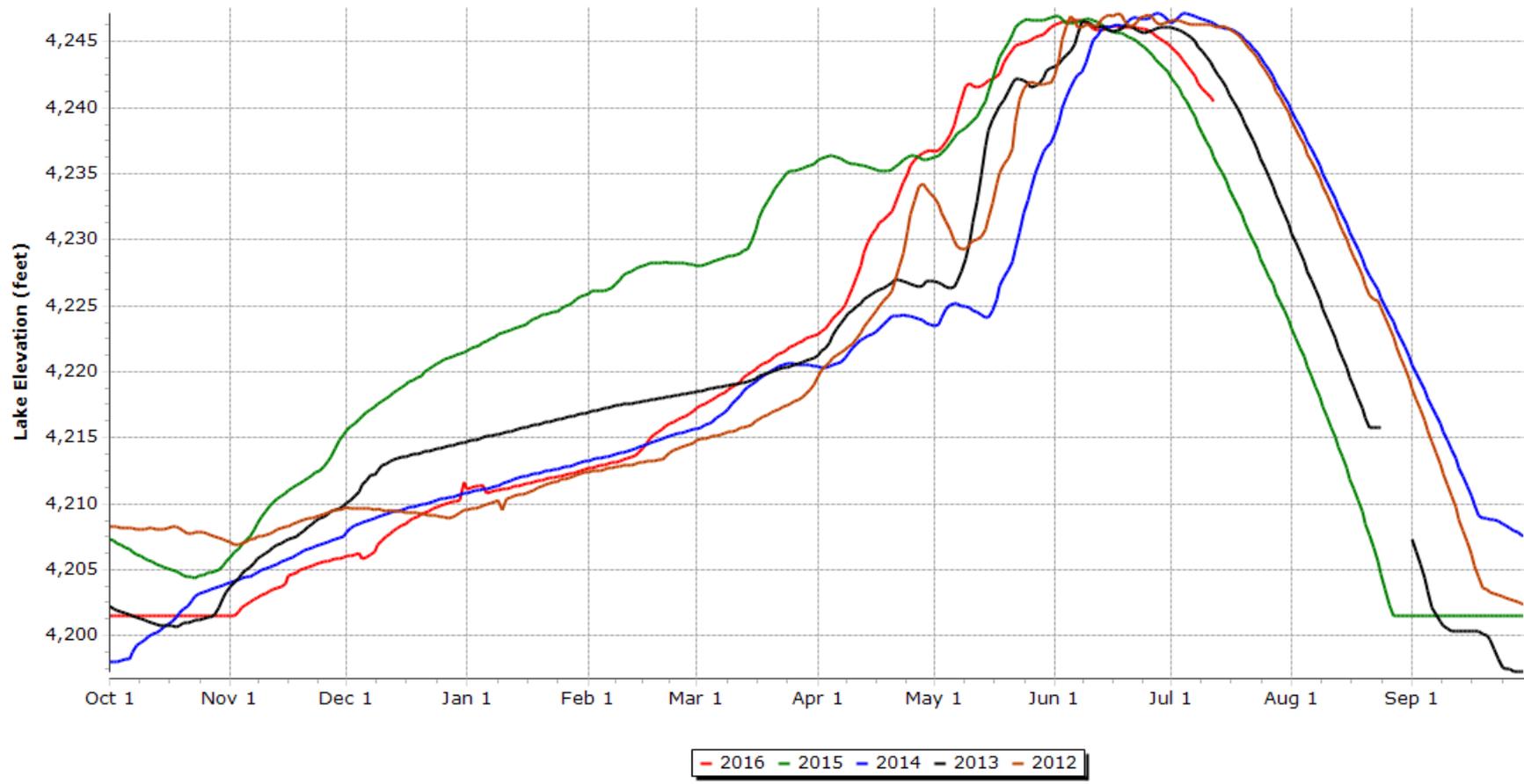
# Hungry Horse 2016 Conditions

- Hungry Horse Reservoir filled to about 1 foot from full elevation and is beginning a slow drawdown.
- Drawdown of 10 feet from full by the end of September. Expect discharges of about 2,100 cfs.
- The discharges would be increased if the Flathead River at Columbia Falls is forecast to drop below the minimum flow of 3,500 cfs.

## Hungry Horse Operations (WY 2016)



## Lake Como Elevations 2012-2016



# Lake Como Operations

- Lake Como is currently being drawn down for irrigation.
- With current withdrawals should be near normal levels by the end of the irrigation season.

# MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

WATER RESOURCES DIVISION - STATE WATER PROJECTS BUREAU

**June 30, 2016**

All Contents in Acre-Feet

RESERVOIR	TOTAL CAPACITY (includes dead storage)*	CONTENTS					% CAPACITY 6/30/2016	%AVERAGE for June	READING DATE	COMMENTS
		AVERAGE	Last Year	Last Month	PRESENT					
		1960 - 2014 for June	6/30/2015	5/30/2016	6/30/2016	6/30/2016				
<b>Clark Fork Basin</b>										
E.F. ROCK CREEK	16,040	12,411	11,542	15,979	<b>13,924</b>	87	112	7/6/2016	elev.=6050	
NEVADA CREEK	11,207	10,174	6,833	8,920	<b>6,750</b>	60	66	7/6/2016	elev.=4602.60	
W.F. BITTERROOT	32,362	24,028	32,709	32,362	<b>32,758</b>	101	136	7/4/2016	spilling	
<b>Lower Missouri Basin</b>										
ACKLEY	6,722	5,509	6,472	6,472	<b>6,342</b>	94	115	6/29/2016	elev. =4316.48	
BAIR	7,300	5808	7,359	6,519	<b>5,098</b>	70	88	7/7/2016	elev.=5315.91	
DEADMAN'S BASIN	75,968	53,828	73,624	67,010	<b>65,790</b>	87	122	6/10/2016	elev.=3915.92 (62,040 AF)	
FRENCHMAN	2,777	2,711	1,316	2,777	<b>2,717</b>	98	100	6/8/2016	elev. =2264.52	
MARTINSDALE	23,348	16,765	22,408	18,170	<b>15,413</b>	66	92	7/7/2016	elev.=4768.6	
N.FK. SMITH RIVER	11,406	9,754	10,448	11,418	<b>8,604</b>	75	88	6/2/2016	elev.=5478.98	
YELLOWWATER	3,842	1,728	3,600	3,431	<b>2,280</b>	59	132	6/29/2016	elev.=3113.95	
<b>Upper Missouri Basin</b>										
MIDDLE CREEK	10,184	10,044	9,971	10,159	<b>9,908</b>	97	99	7/7/2016	elev.=6719.9	
NILAN	10,992	8,770	10,118	7,848	<b>9,575</b>	87	109	6/21/2016	elev.=4441.86	
RUBY RIVER	37,612	35,270	31,893	37,923	<b>33,066</b>	88	94	7/7/2016	elev. = 5388.2	
WILLOW CREEK	18,000	16,137	18,000	18,111	<b>17,131</b>	95	106	6/30/2016	elev. =4734.88	
<b>Yellowstone Basin</b>										
COONEY	28,230	24,615	28,230	27,790	<b>27,002</b>	96	110	6/28/2016	elev.=4249.58 (26,912 AF)	
COTTONWOOD	1,900	1,884		1,980	<b>1,722</b>	91	91	6/29/2016	elev. =5101.72	
TONGUE RIVER	79,071	72,212	80,480	80,856	<b>75,403</b>	95	104	6/15/2016	elev. =3427.4	

\* Note: Reservoir contents include dead storage at the following:

Ackley 1001 AF \*\*  
 Cooney 90 AF \*\*  
 Deadman's 3750 AF \*\*  
 Nilan 900 AF \*\*

\*\* O&M slope storage table does not include dead storage (so dead storage has to be added into the storage from the table)  
 Tongue River 711 AF (O&M storage table includes dead storage)  
 W. F. Bitterroot 656 AF (O&M storage table includes dead storage)  
 Willow Creek 269 AF (O&M storage table includes dead storage)

\* Note: Cooney capacity reflects capacity after 1982 dam rehabilitation; prior capacity was 24,195 A.F.. Average storage shown is for post rehabilitation data.

\* Note: Middle Creek capacity reflects capacity after 1993 dam rehabilitation; prior capacity was 8,027 A.F.. Average storage shown is for post rehabilitation data.

\* Note: Nevada Creek Reservoir Capacity reflects live storage capacity survey conducted in year 2000. Prior live storage capacity documented as 12,723 AF.

\* Note: Tongue River capacity reflects capacity after 1999 dam rehabilitation; prior capacity was 68,040 A.F.. Average storage is post rehabilitation data.

\* Note: Frenchman Reservoir capacity tables updated based on aerial survey; prior capacity was 3752 A.F. Average shown is pre aerial survey

# Montana Drought & Water Supply Advisory Committee

July 14, 2016

National Weather Service

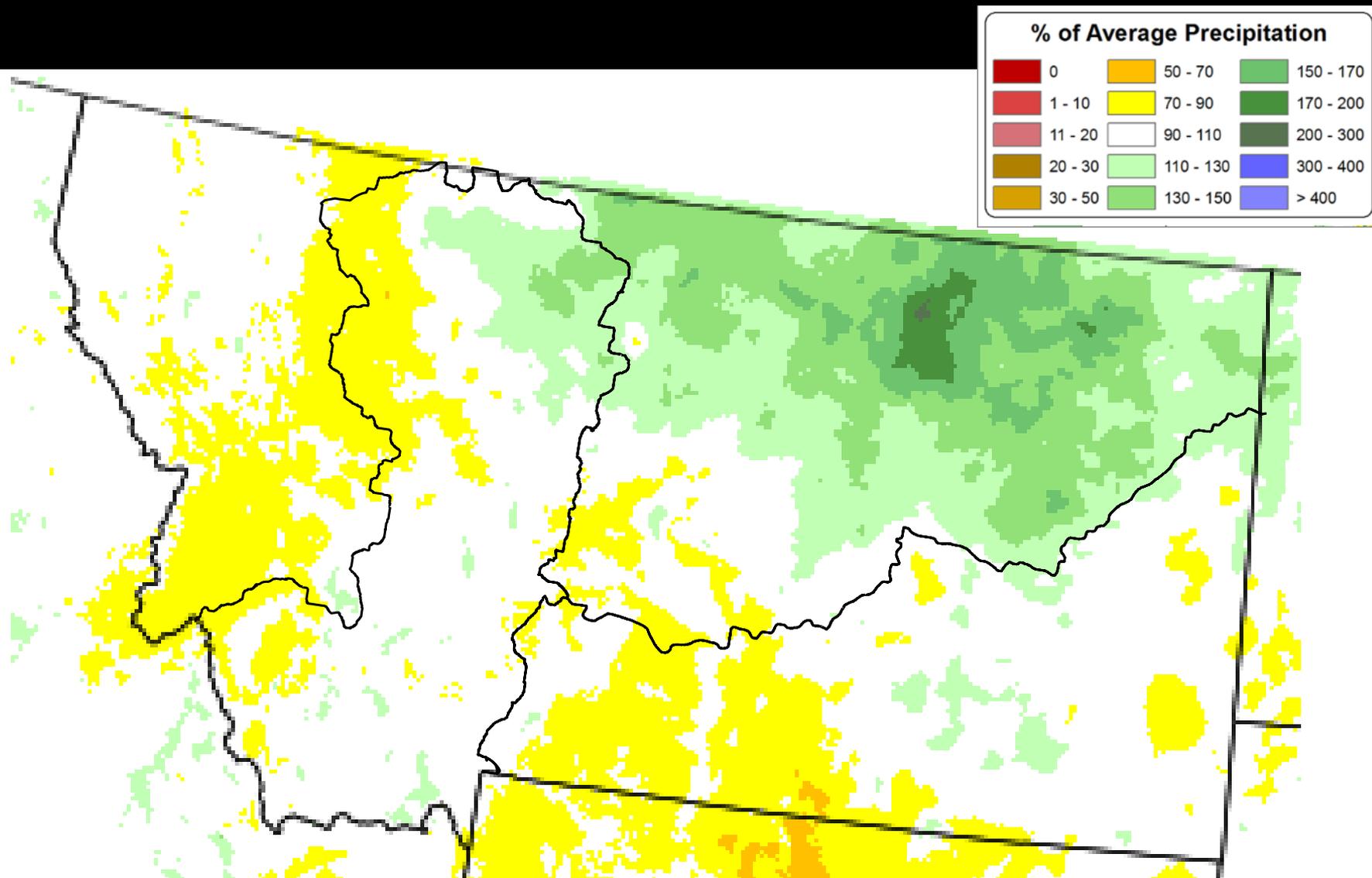
*Donald Britton – Meteorologist-in-Charge*



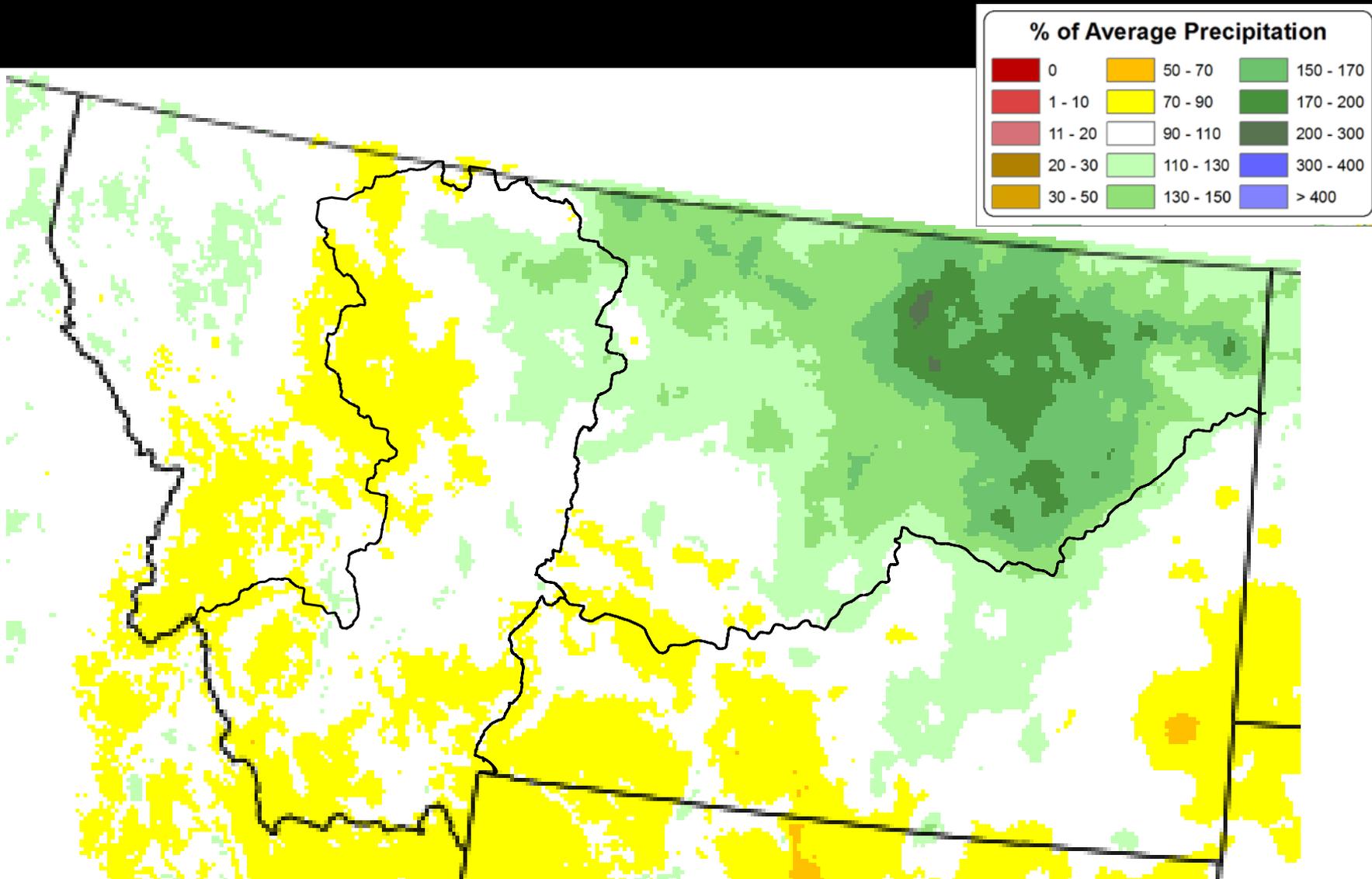
# MOISTURE...



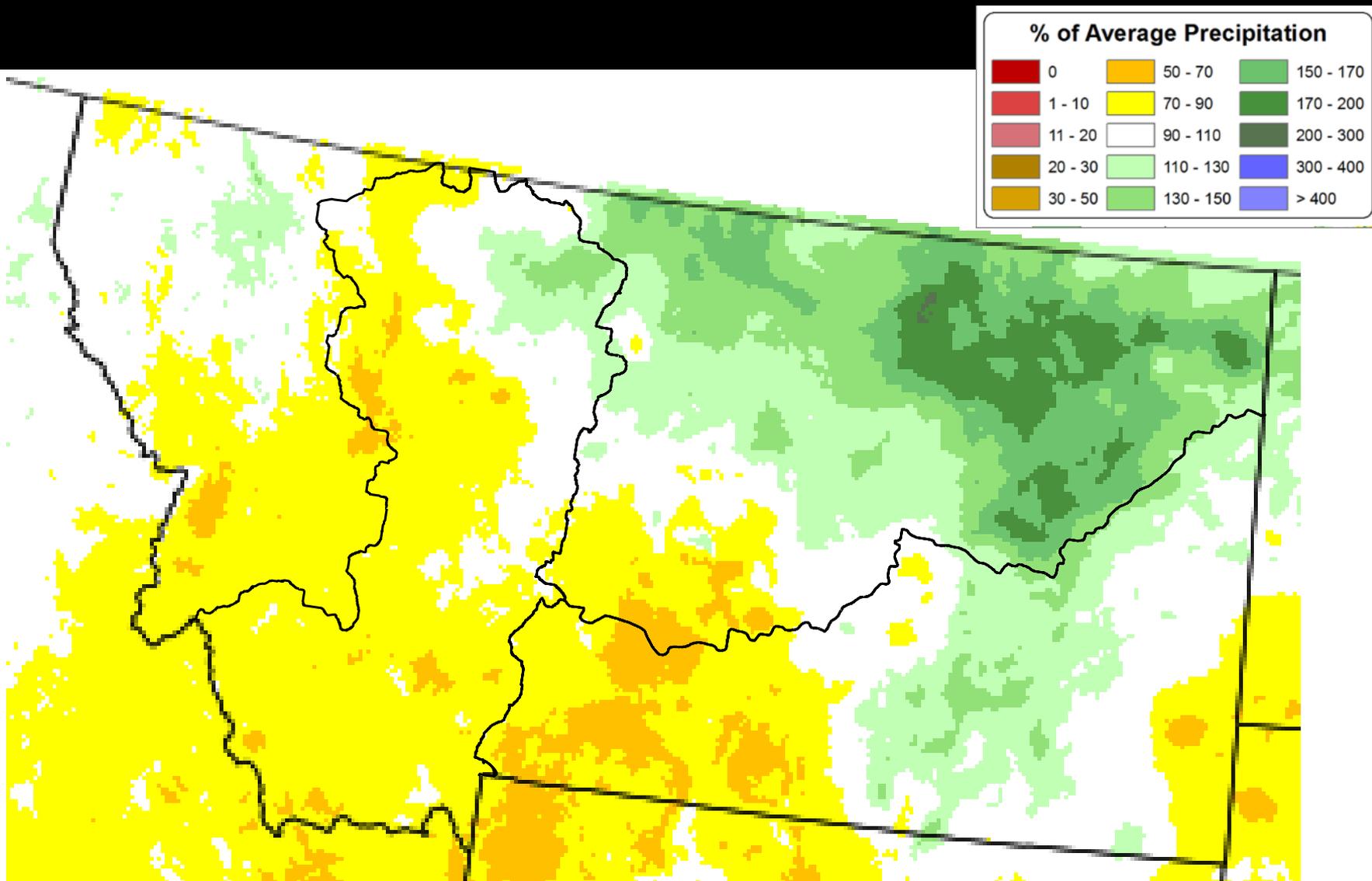
# Precipitation Anomaly Jul 15–Jun 16



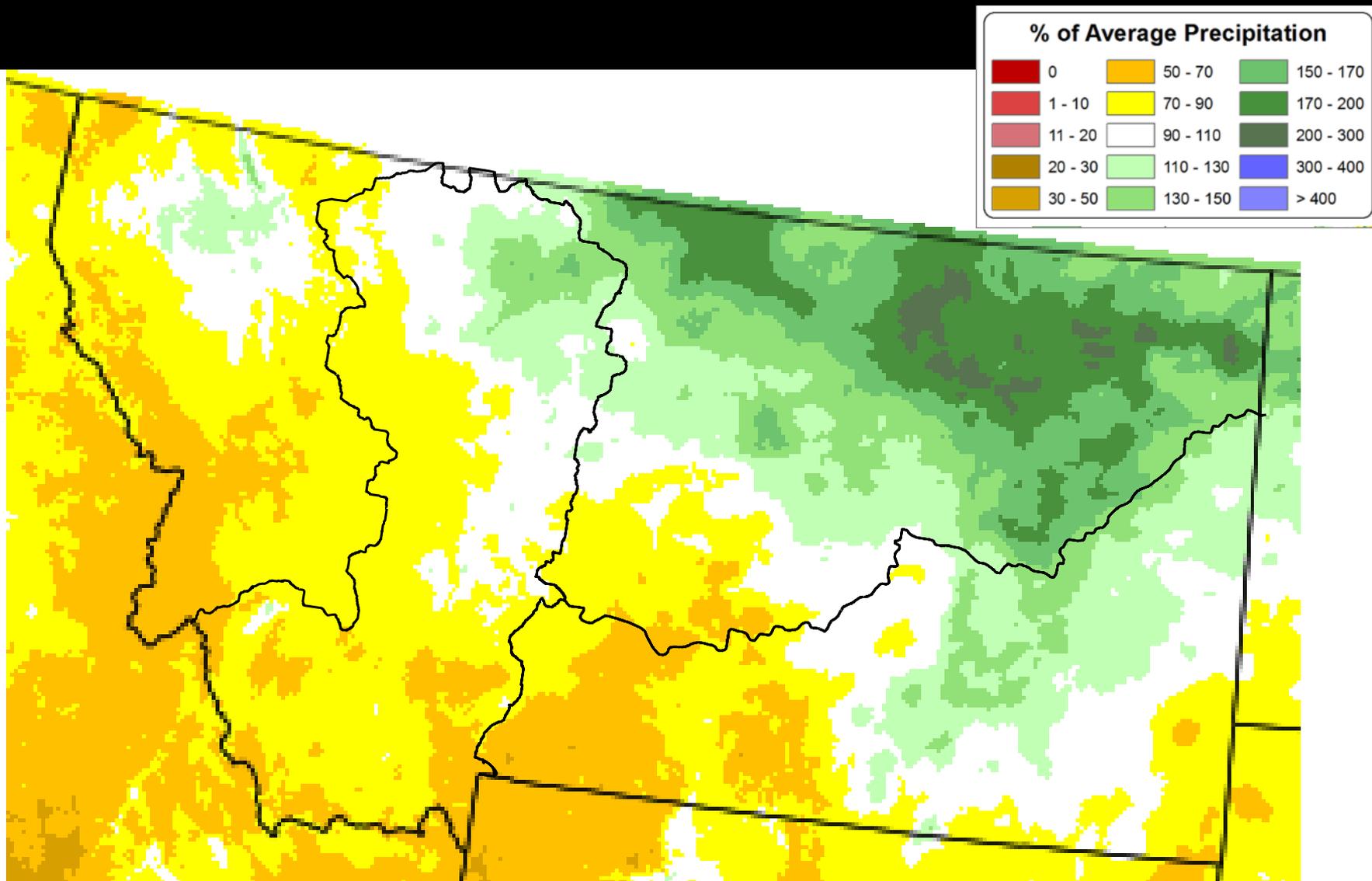
# Precipitation Anomaly Oct 15–May 16



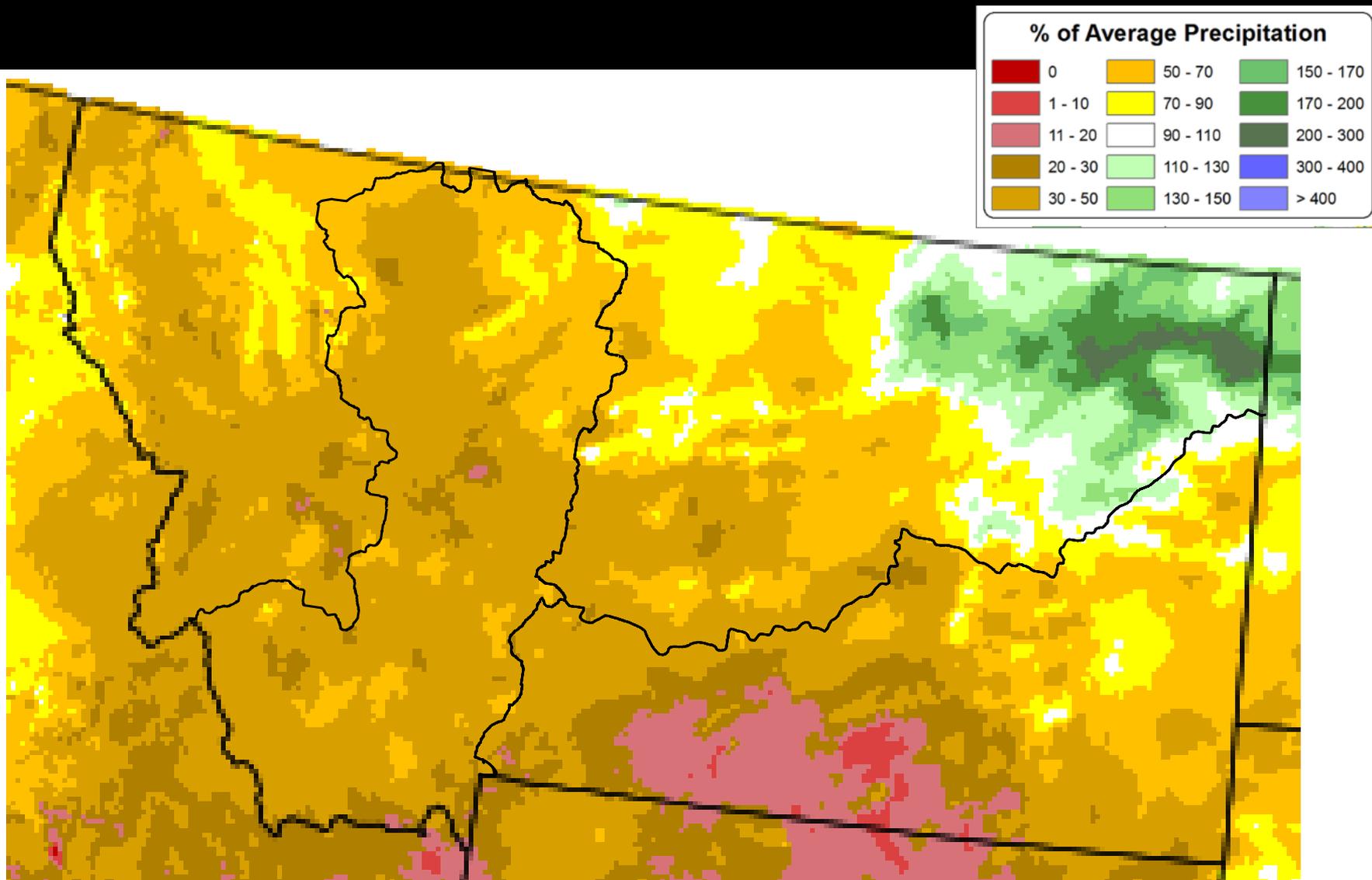
# Precipitation Anomaly Jan - Jun



# Precipitation Anomaly Crop Year Apr–Jun

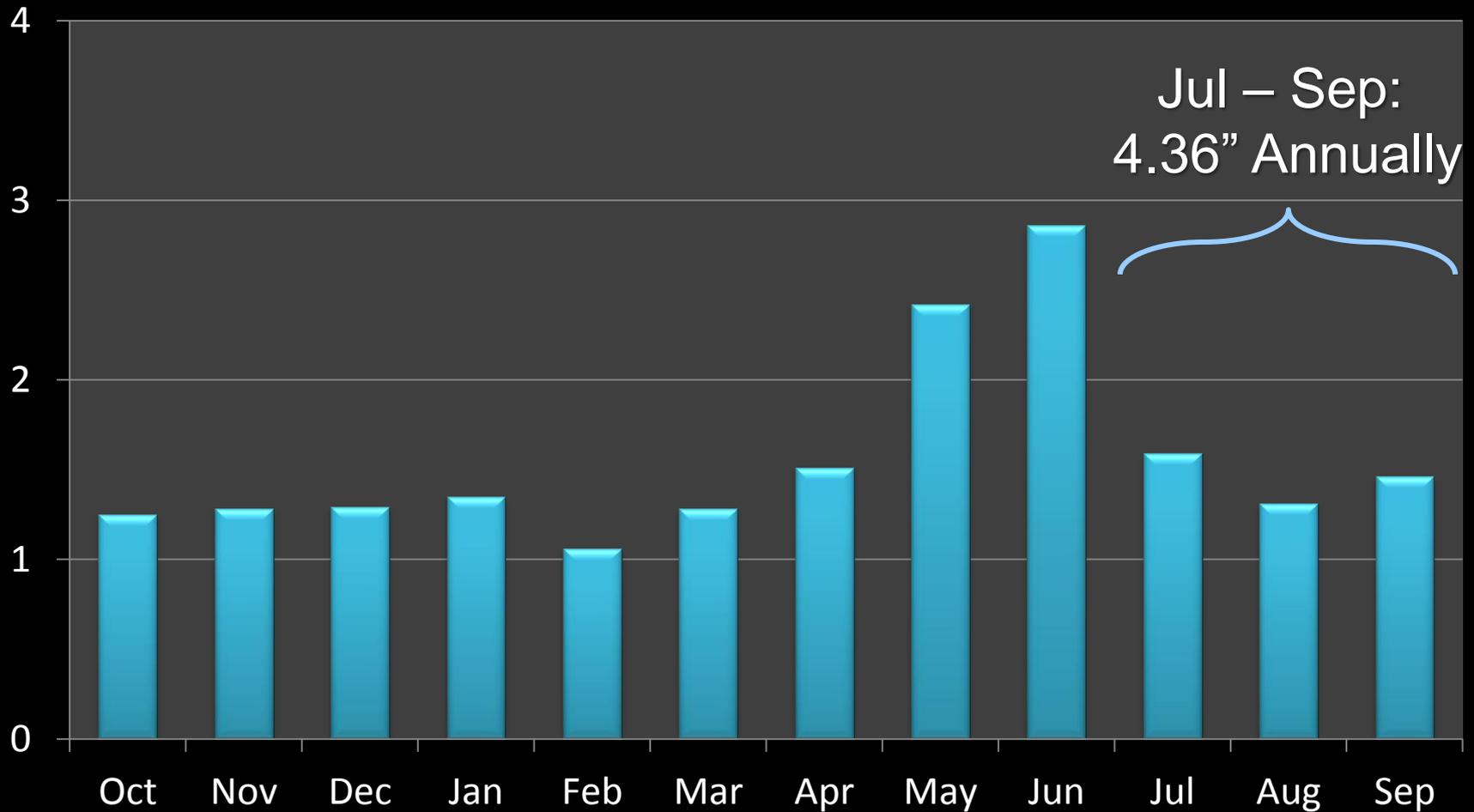


# Precipitation Anomaly Jun '16



# Statewide Average Precipitation

## 18.66" Annually



# TEMPERATURE...



# Montana: Jul 2015 – Jun 2016

## Warmest on Record

Avg Temp	20 <sup>th</sup> Century Average	Departure
45.3°F	41.1°F	4.2°F

## Precipitation Just Above Normal (62<sup>nd</sup> Wettest)

Precip	20 <sup>th</sup> Century Average	Departure
18.82"	18.66"	0.17"

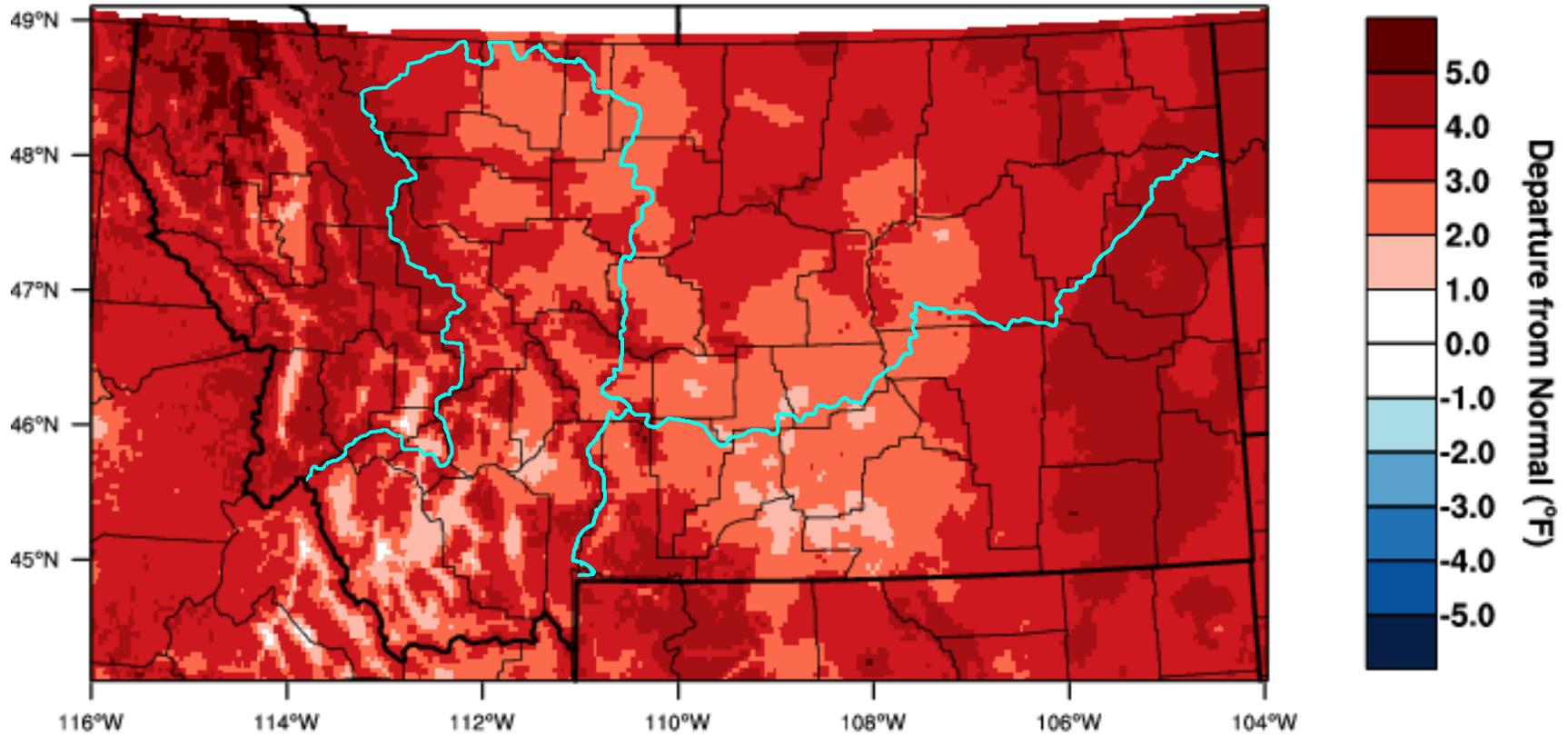


# Mean Temperature

## Water Year 2016

### Montana - Mean Temperature

October-June 2016 Departure from 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 JUL 2016

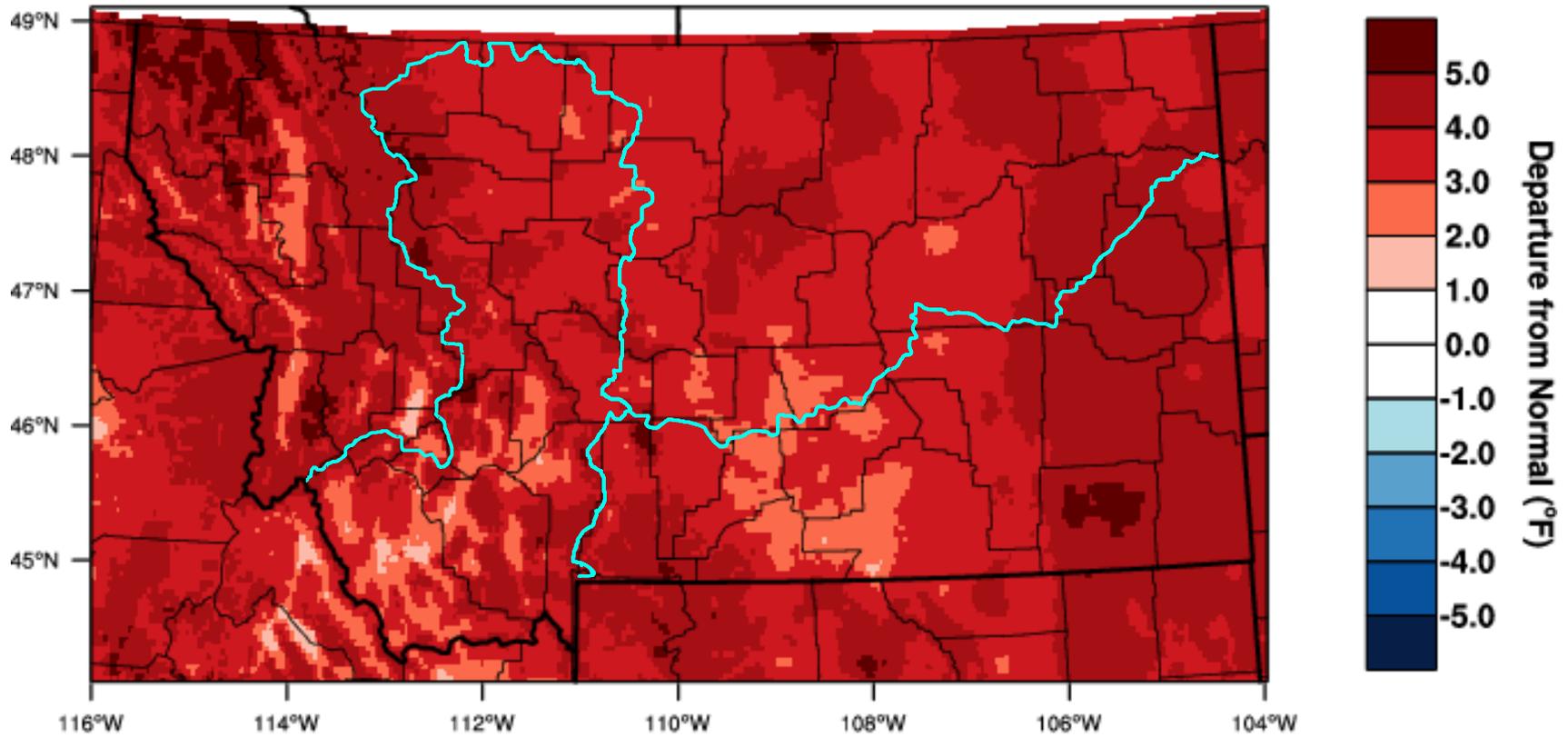


# Mean Temperature

## Calendar Year 2016

### Montana - Mean Temperature

January-June 2016 Departure from 1981-2010 Normal



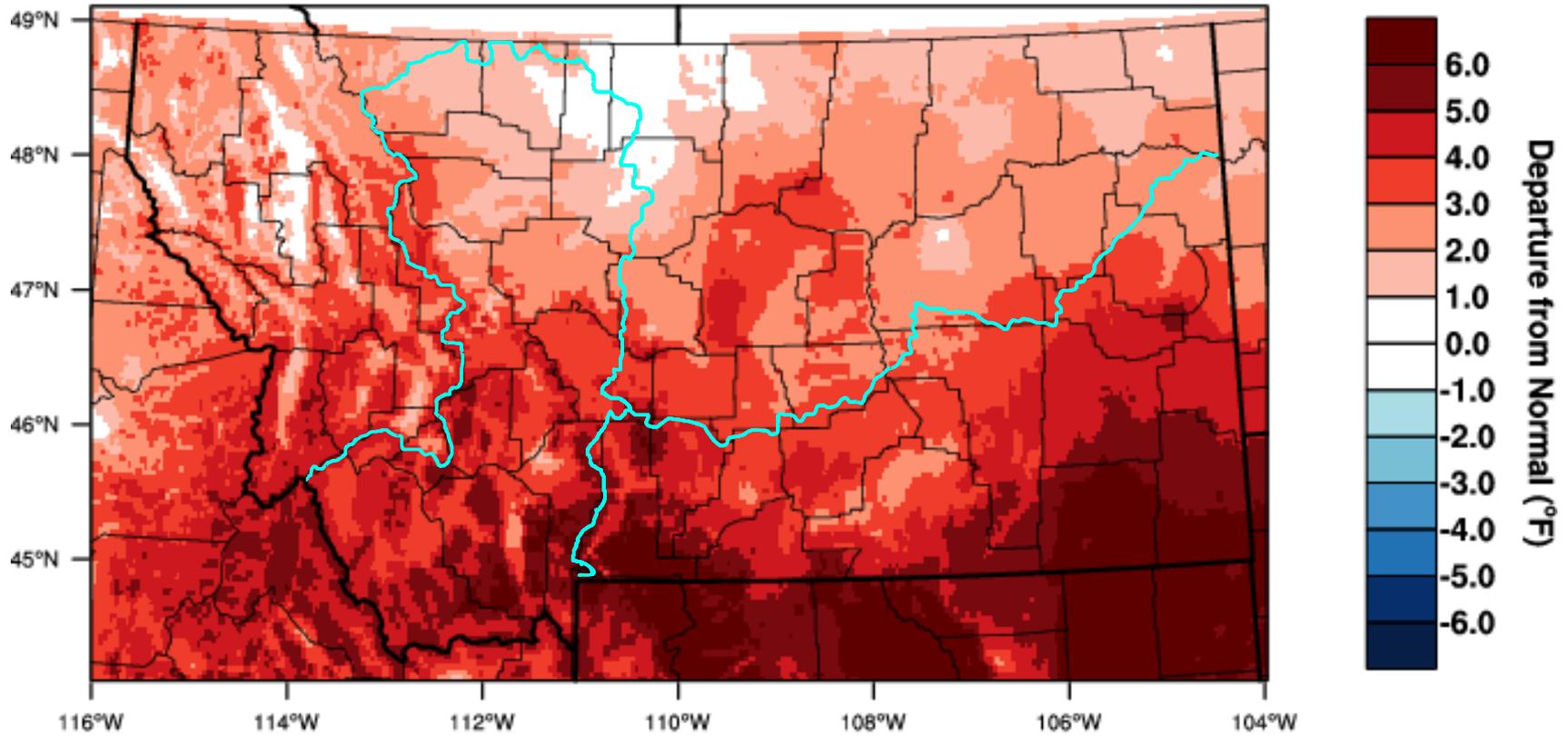
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 11 JUL 2016



# Mean Temperature

## June 2016

Montana - Mean Temperature  
June 2016 Departure from 1981-2010 Normal



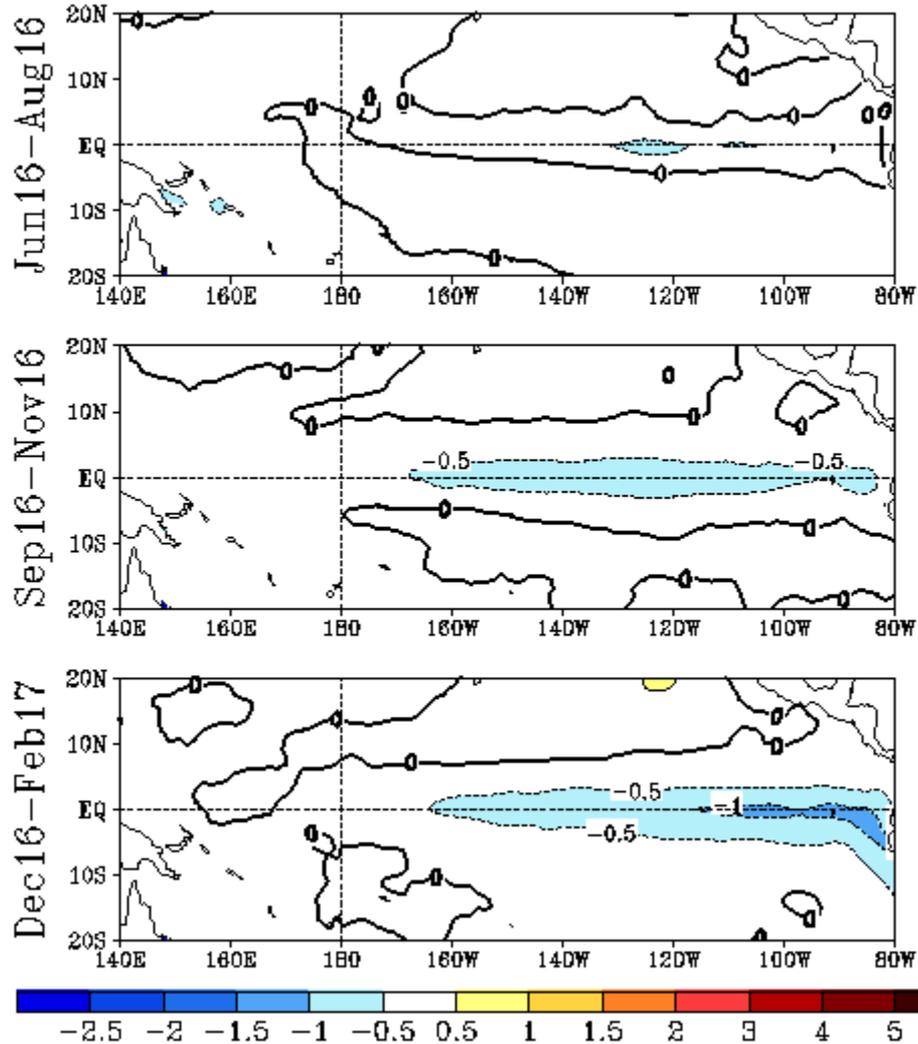
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 11 JUL 2016



# CLIMATE...

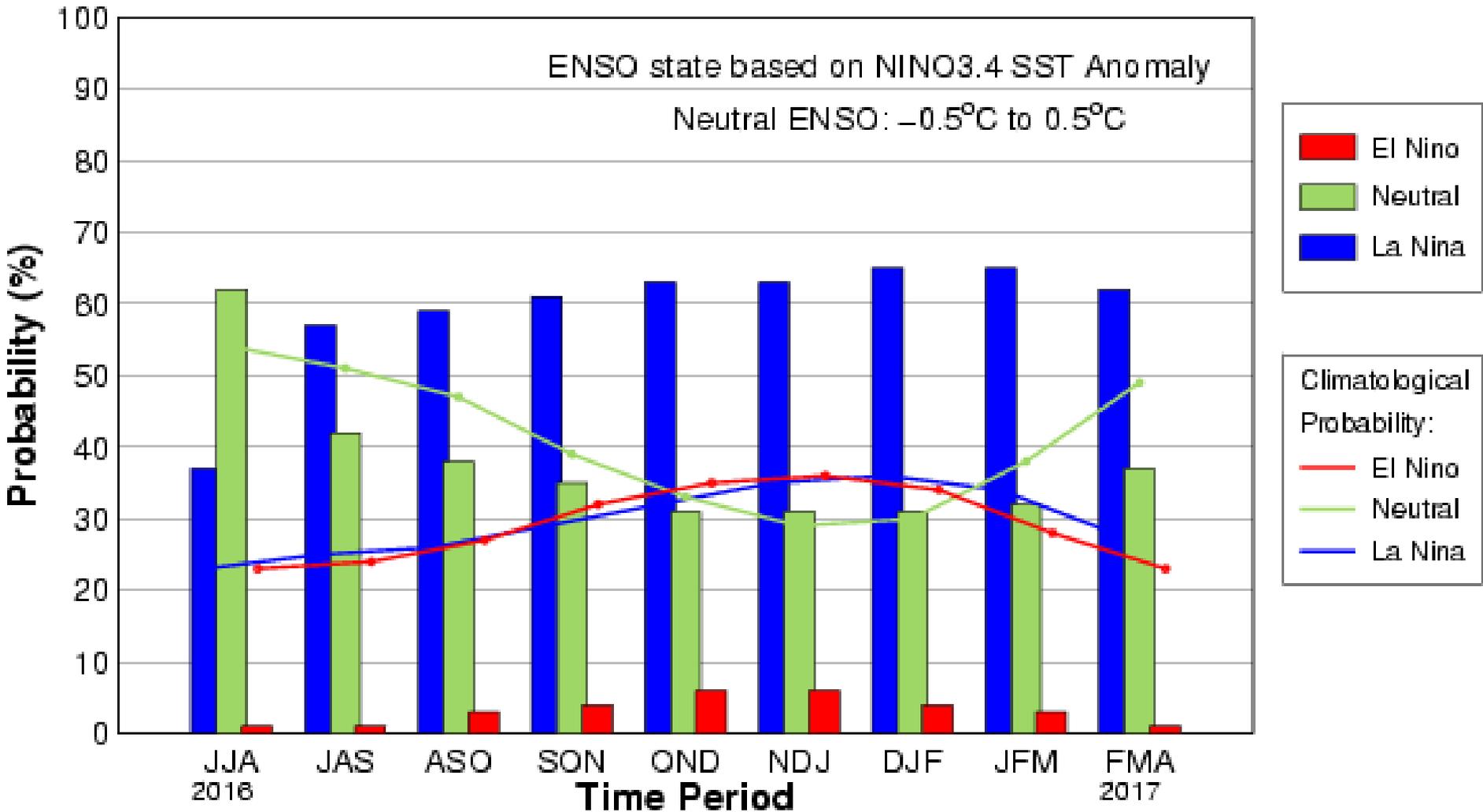


# El Niño / La Niña



# El Niño / La Niña

Mid-Jun IR/CPC Model-Based Probabilistic ENSO Forecast

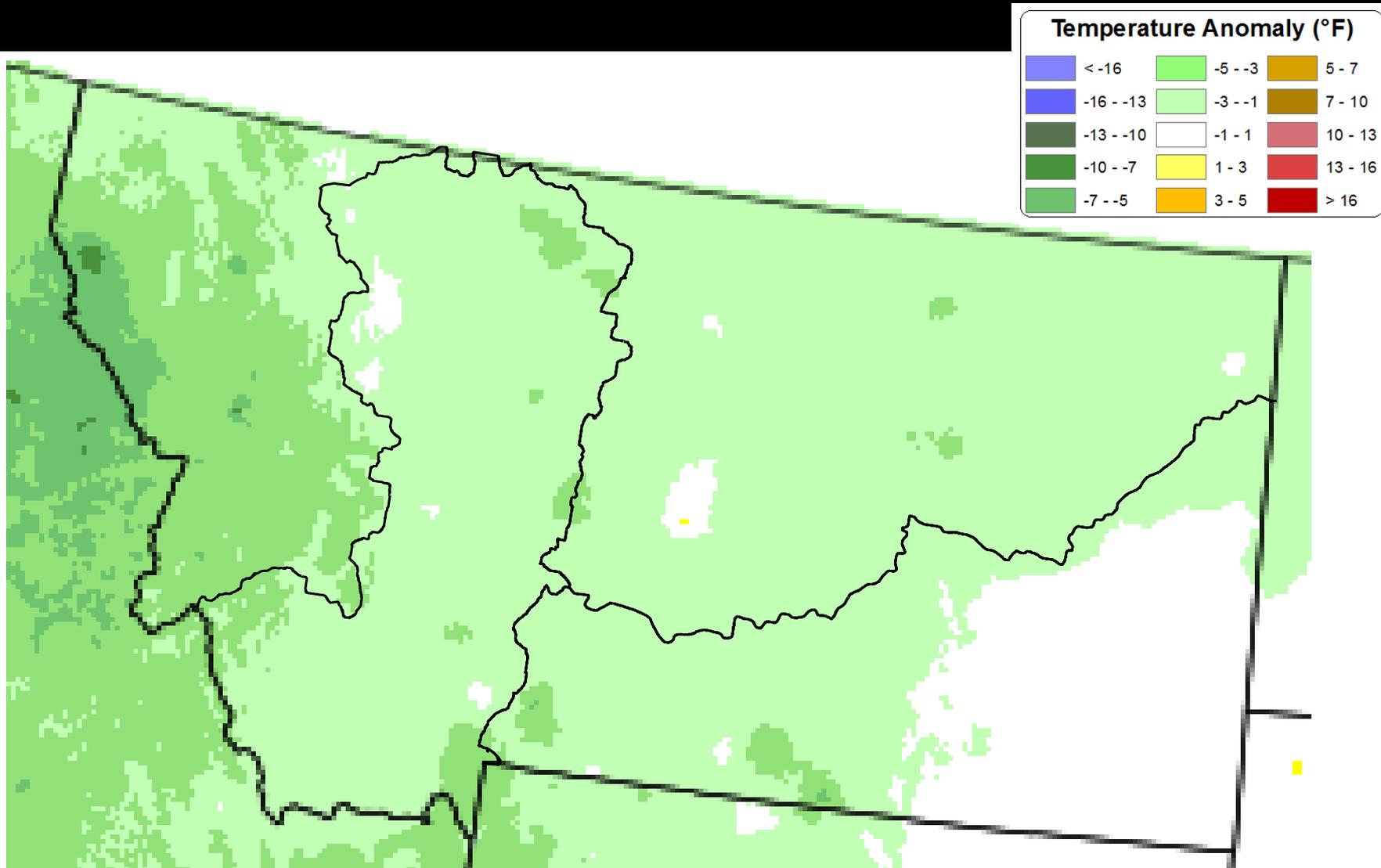


THIS MONTH SO FAR...

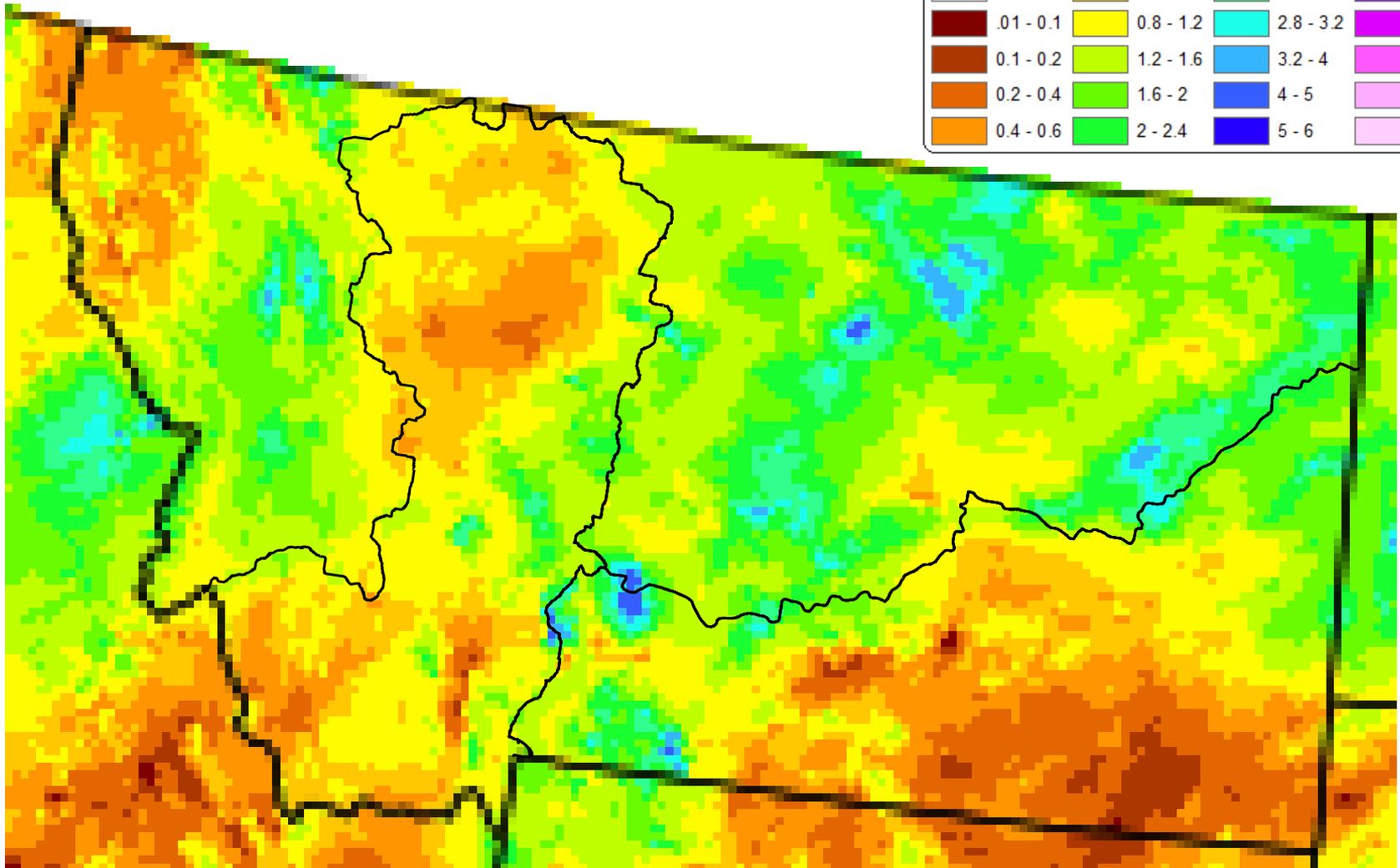
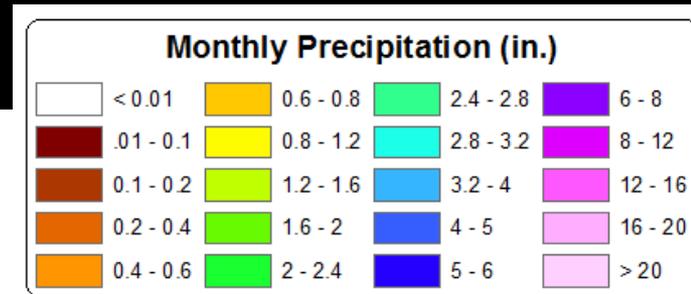


# July Mean Temperatures

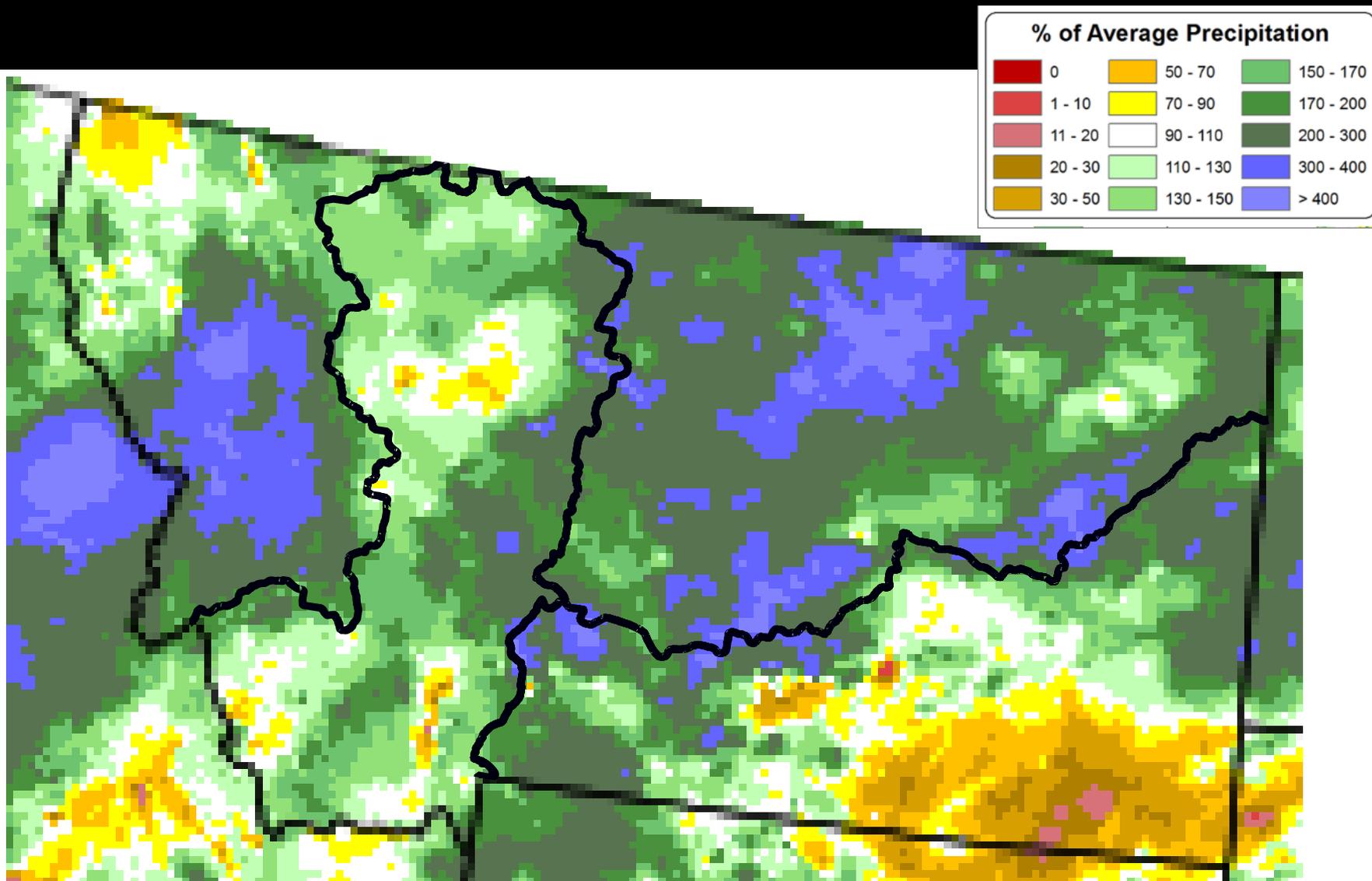
## Cool Anomalies Statewide



# Precipitation Thru July 13



# Precip Anomalies thru July 13

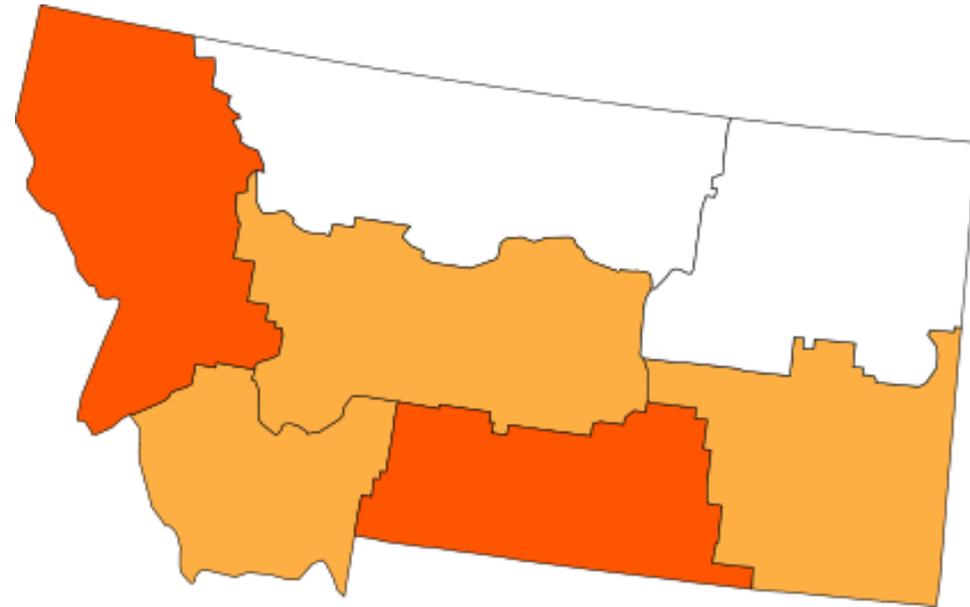
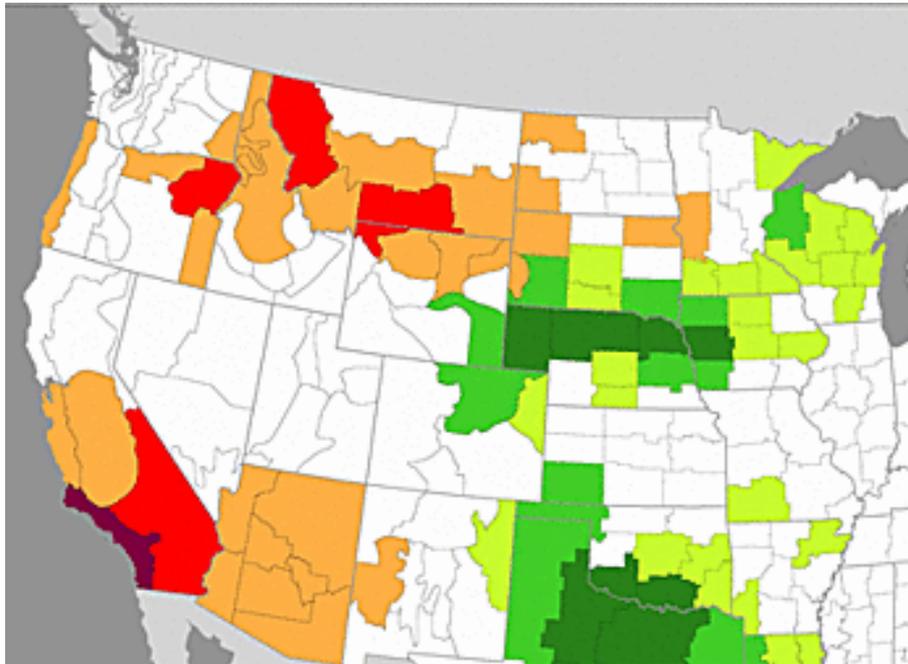


# DROUGHT MONITOR...



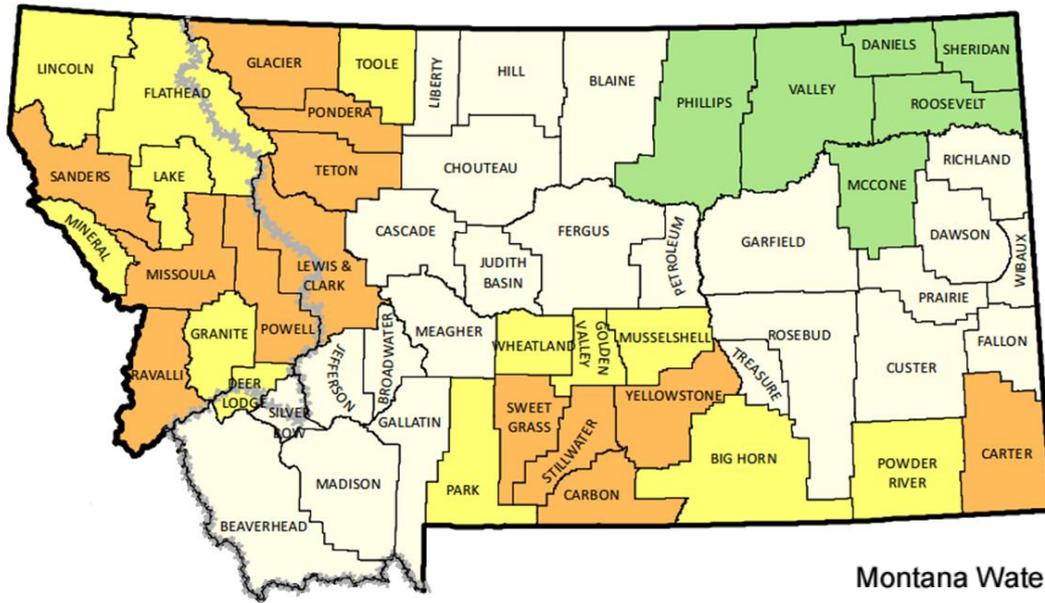
# Latest Palmer Drought Severity Index

## June 2016





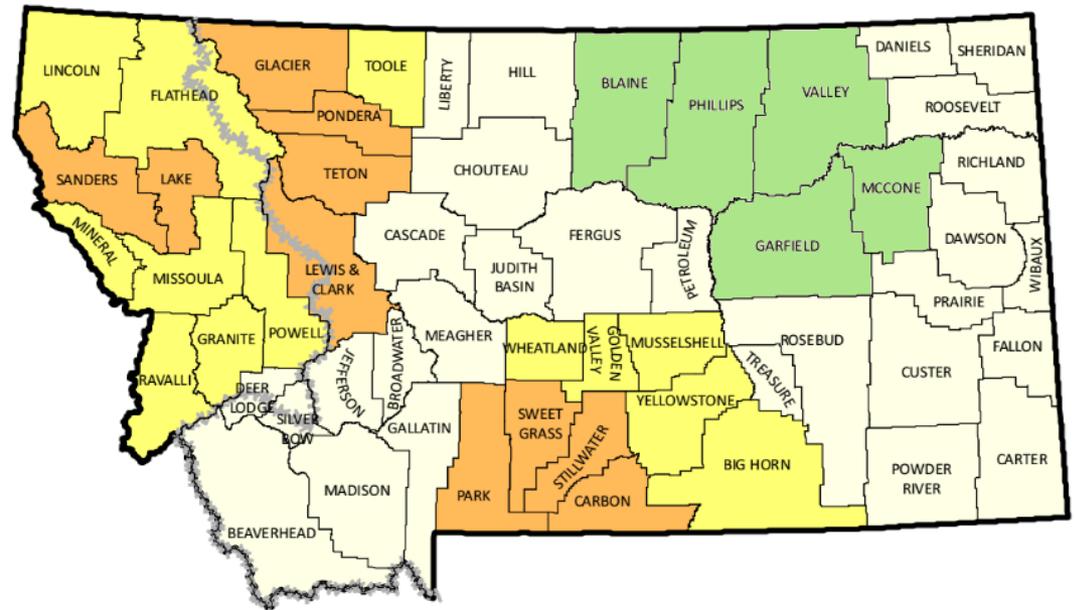
Montana Water Supply and Moisture Status by County - June 2016



# Montana Drought Status

## June vs May

Montana Water Supply and Moisture Status by County - May 2016



### Moisture Status

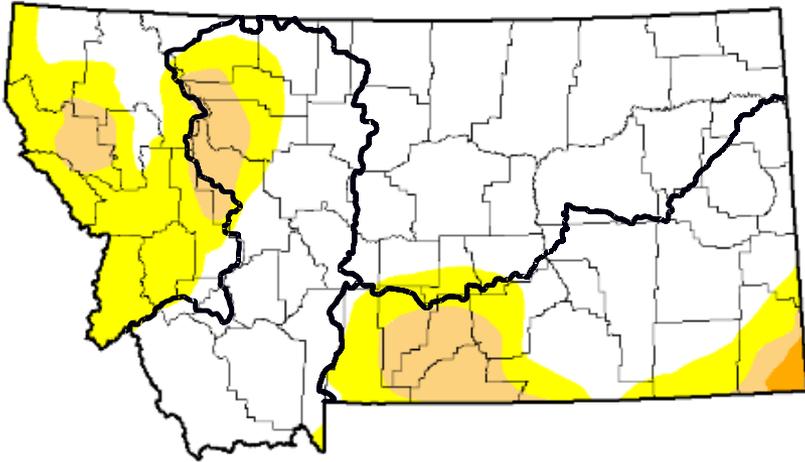
#### Current Month

- Extremely Moist
- Moderately Moist
- Slightly Moist
- Near Average (Normal)
- Slightly Dry
- Moderately Dry (Drought Alert)
- Extremely Dry (Severe Drought)

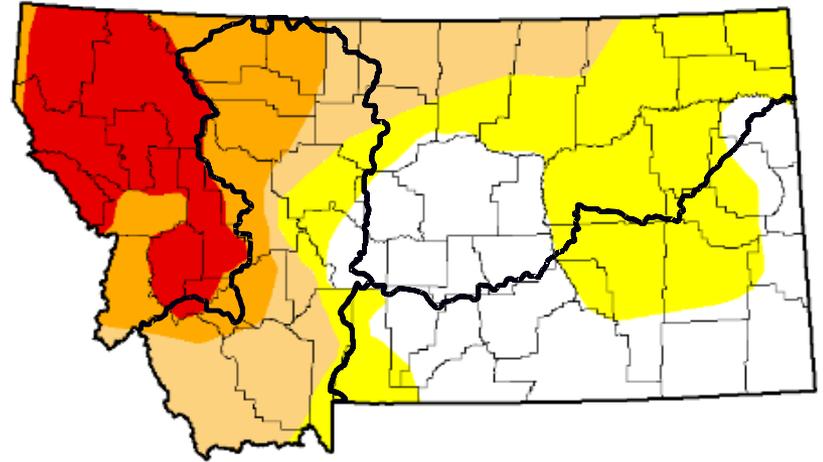


# DM - Montana

## 12-month $\Delta$



**July 12, 2016**



**July 14, 2015**

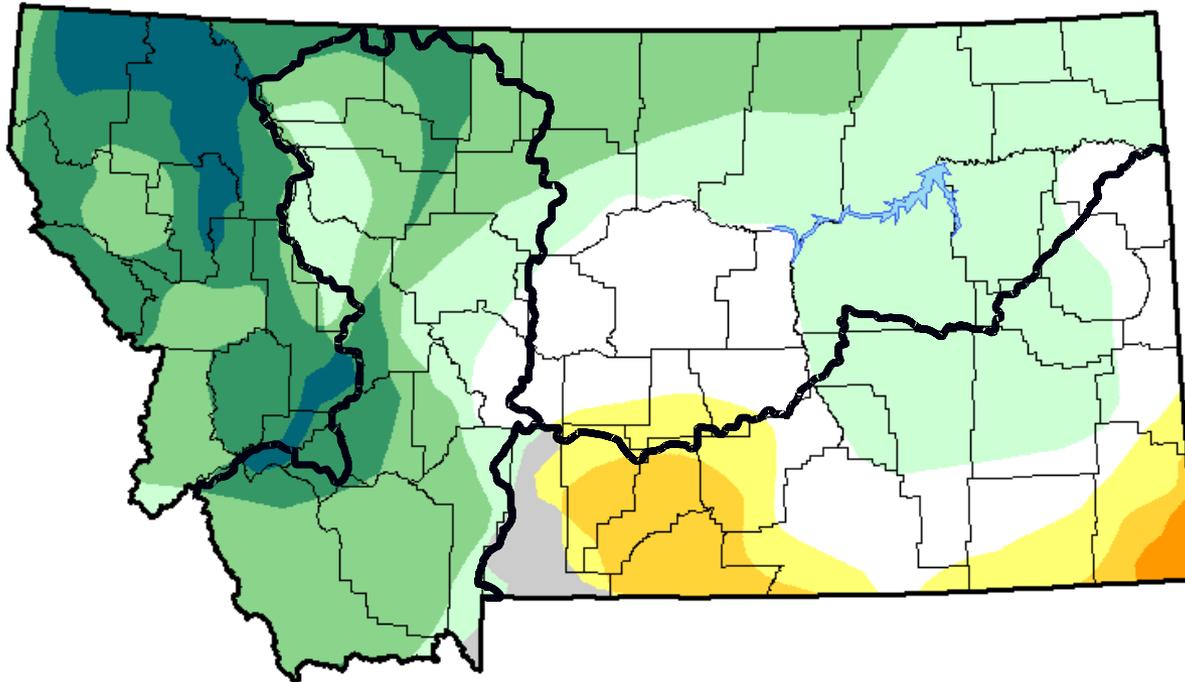
### Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2016-07-12	70.52	29.48	8.74	0.47	0.00	0.00
2015-07-14	28.58	71.42	42.31	25.92	13.60	0.00

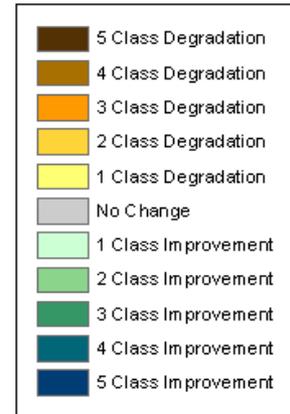


# U.S. DM Montana - 12-month $\Delta$

U.S. Drought Monitor Class Change - Montana  
1 Year



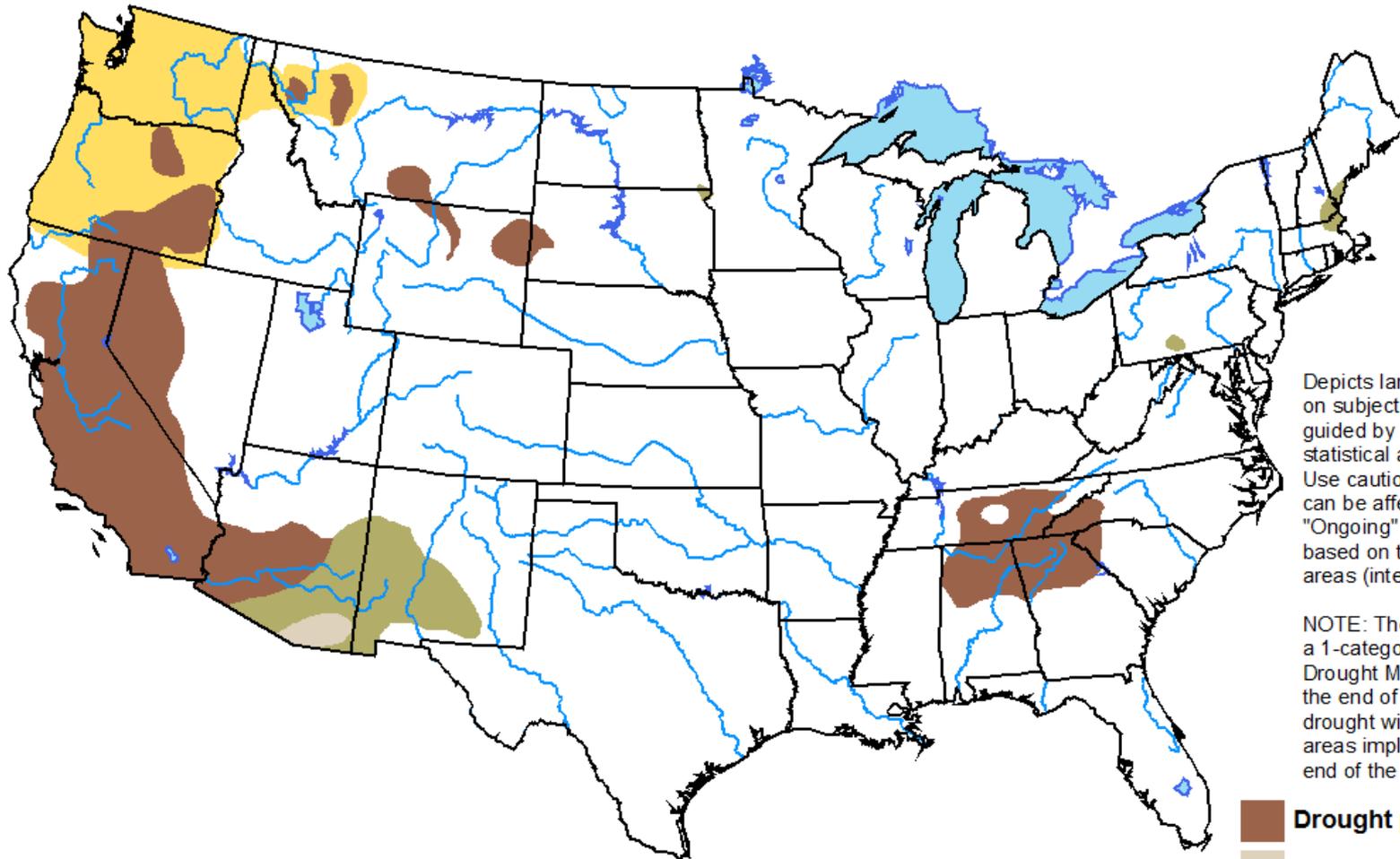
July 12, 2016  
compared to  
July 14, 2015



# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for June 16 - September 30, 2016  
Released June 16, 2016



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



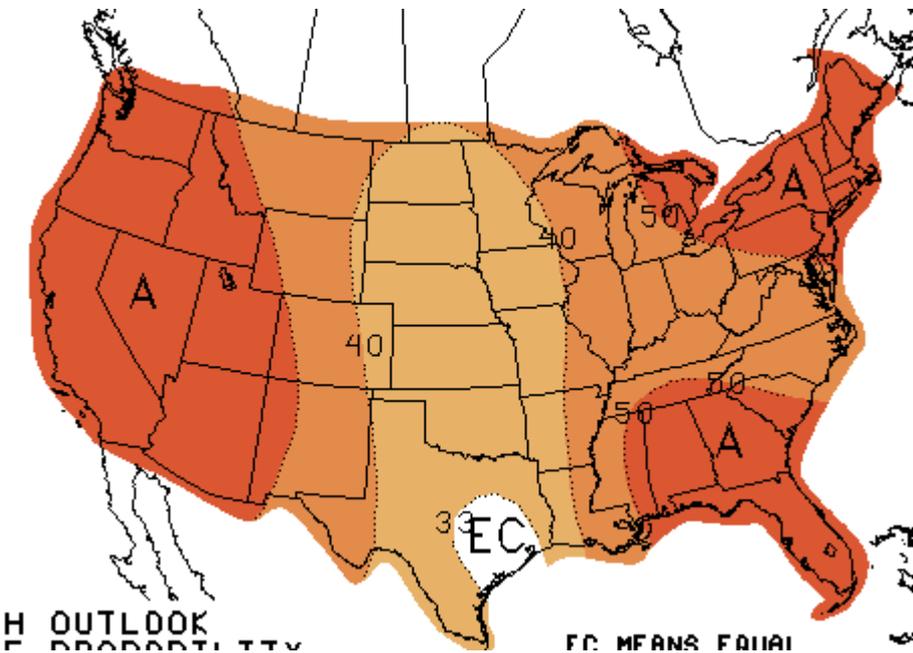
# FORECAST...



# July – September Outlook

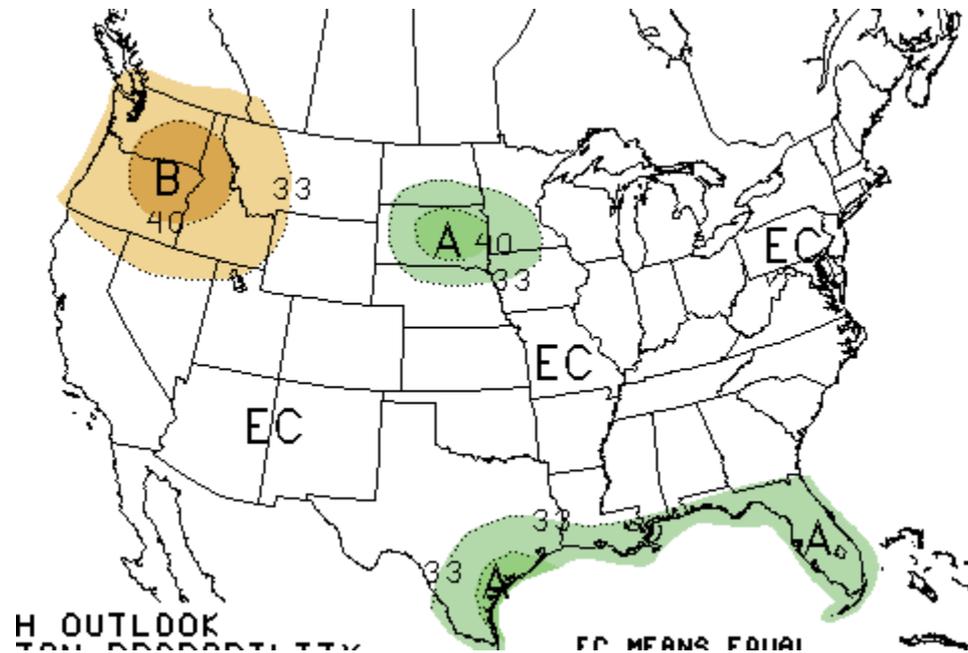
Created June 16

## Temperature



Generally 50% chance of above normal temperatures west, and 40% elsewhere

## Precipitation



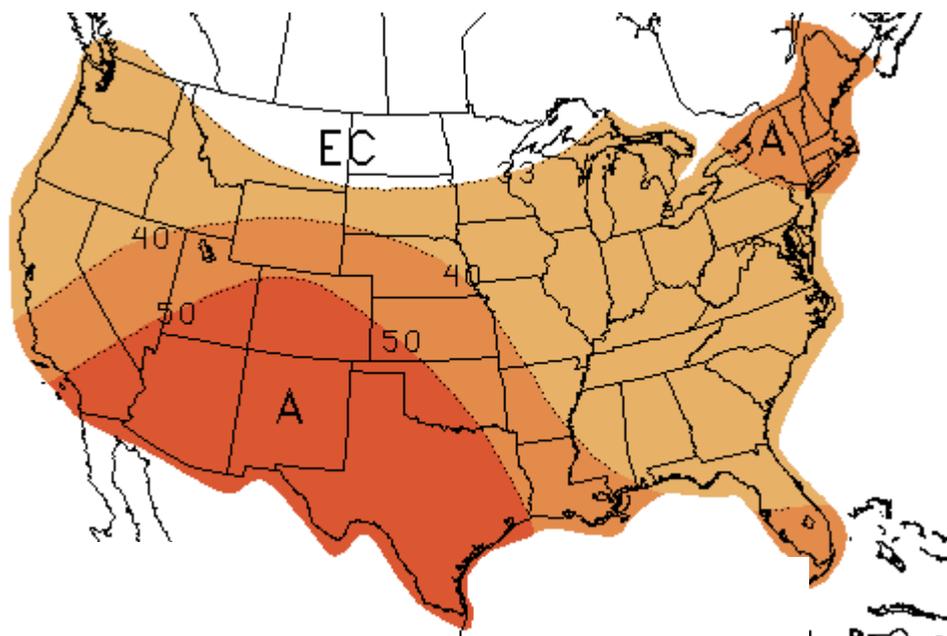
Equal chances for above, below, or near average precipitations for nearly entire state...with 33% chance of below normal in western Montana



# October – December Outlook

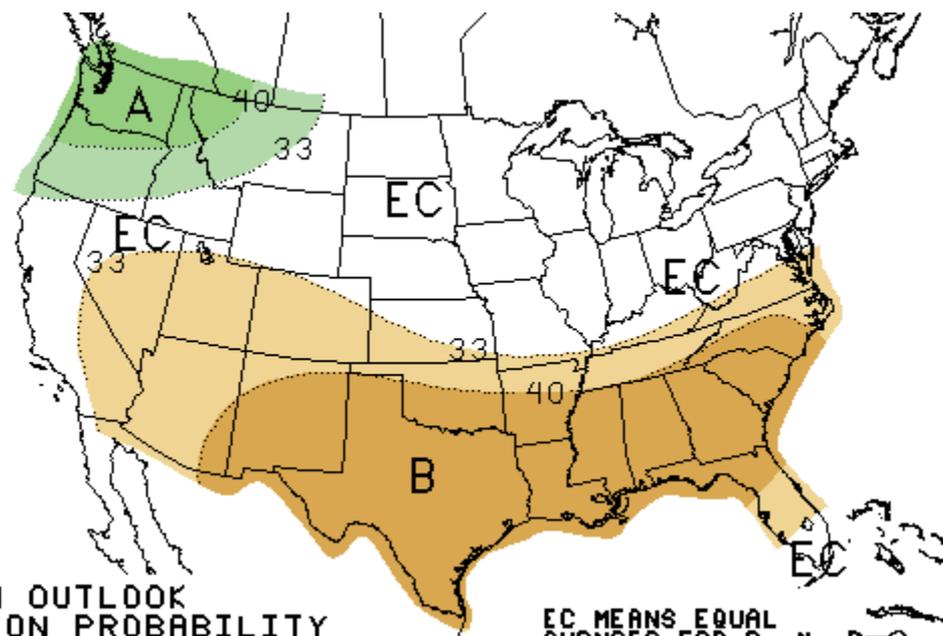
Created June 16

## Temperature



33% chance of above normal temperatures across southern Montana, equal chances of above or below elsewhere

## Precipitation



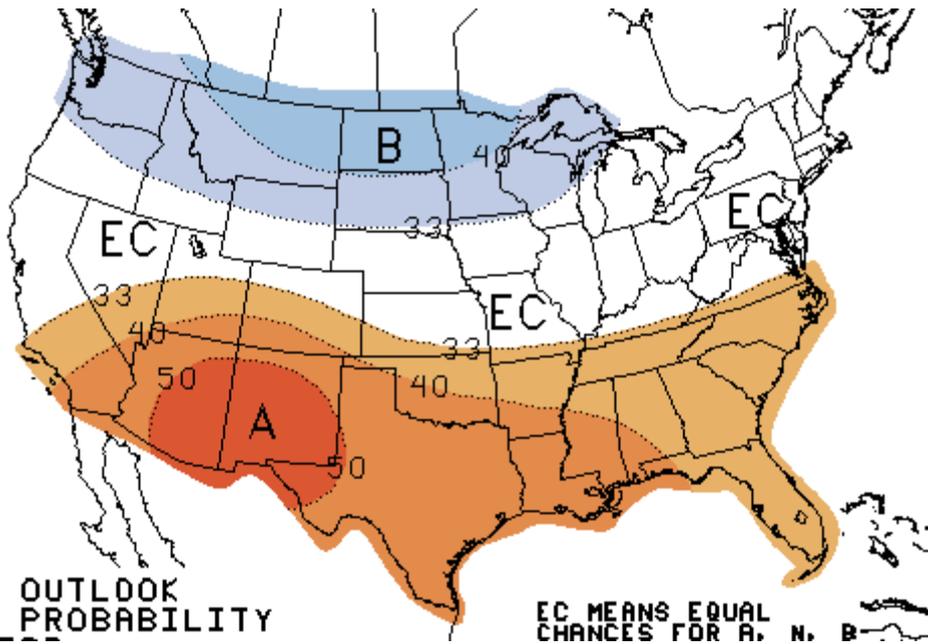
33% to 40% chance of above normal precipitation northwest half of state, equal chances for above or below elsewhere



# Jan – Mar Outlook

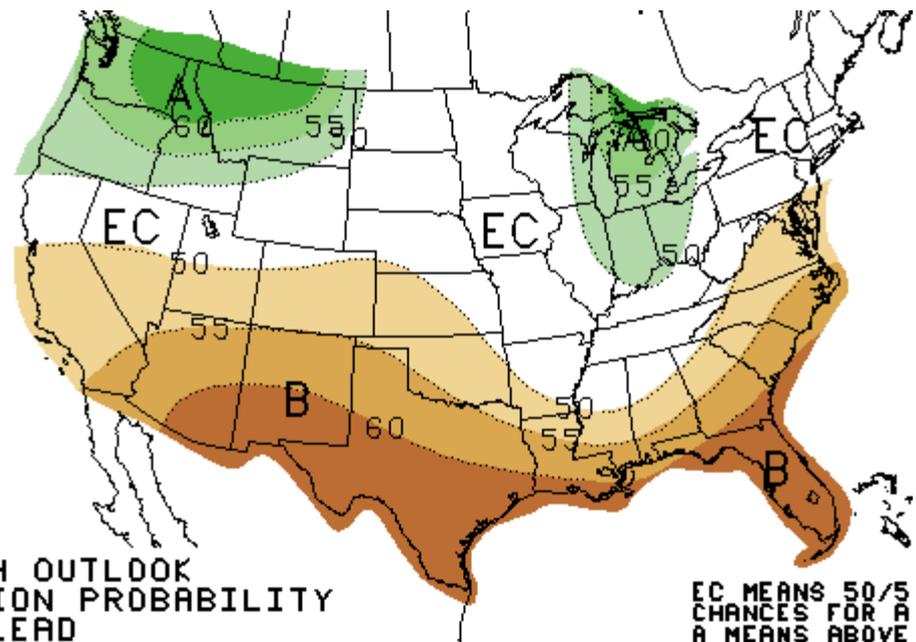
Created June 16

## Temperature



- 33% to 40% chance of below normal temperatures statewide

## Precipitation



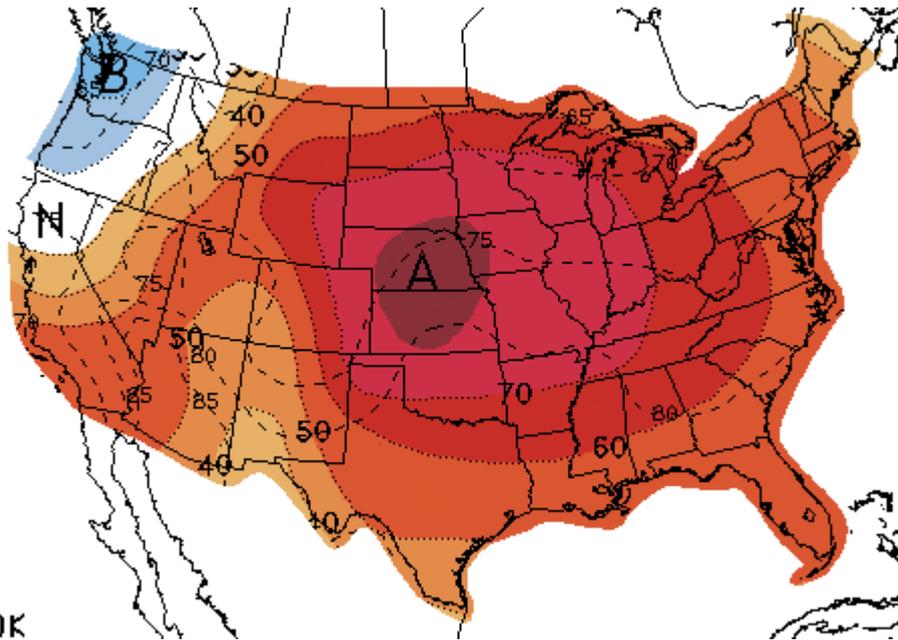
- 50% to 60% chance of above normal precipitation statewide...particularly NW Montana



# 8 – 14 Day Outlook

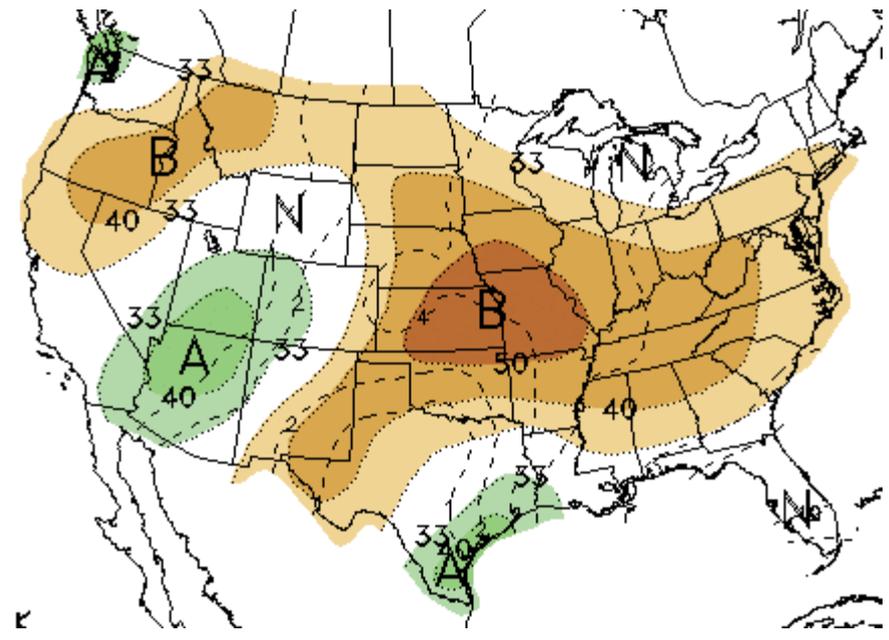
Created June 15

## Temperature



40% to >50% chance of above normal temperatures statewide

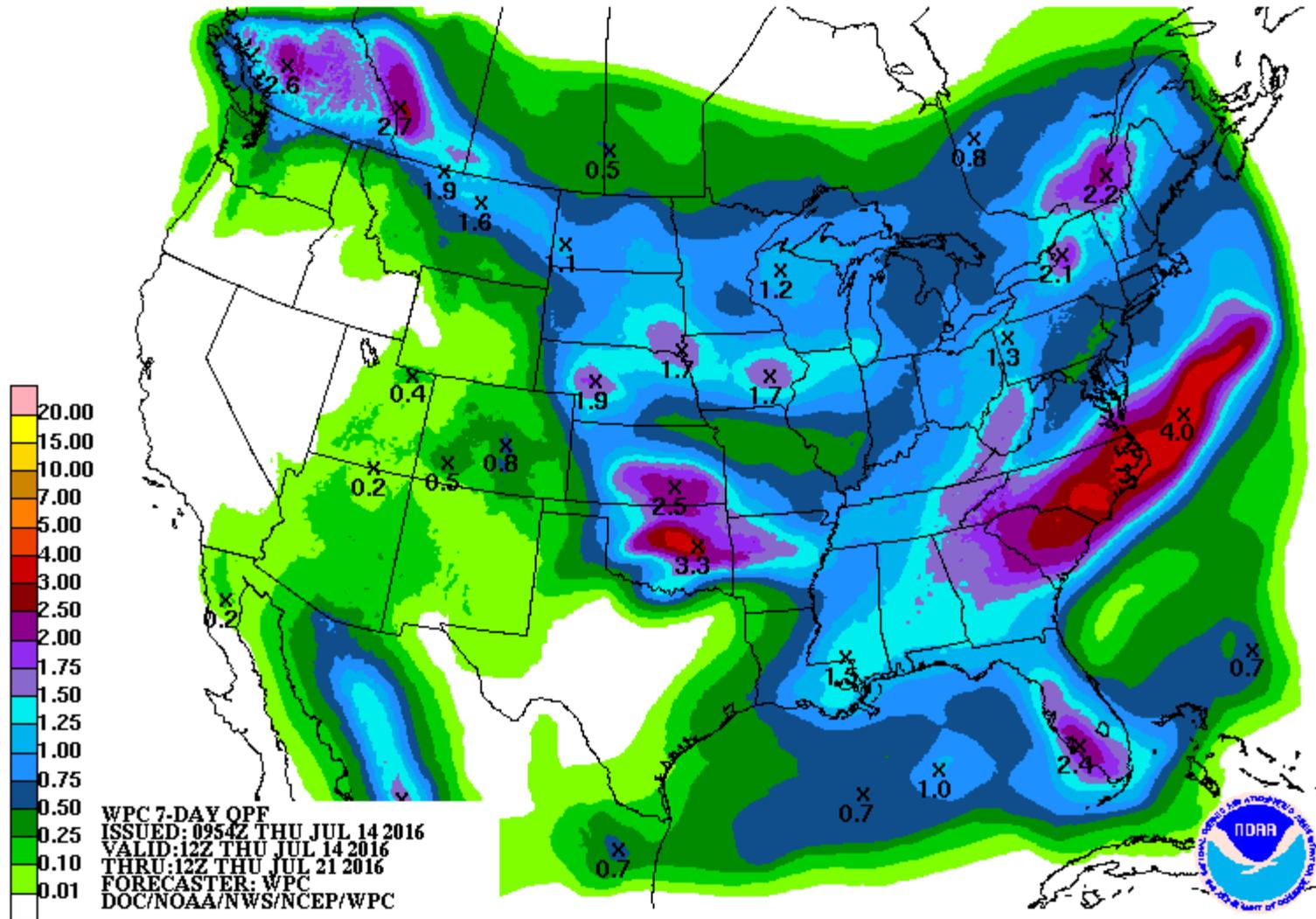
## Precipitation



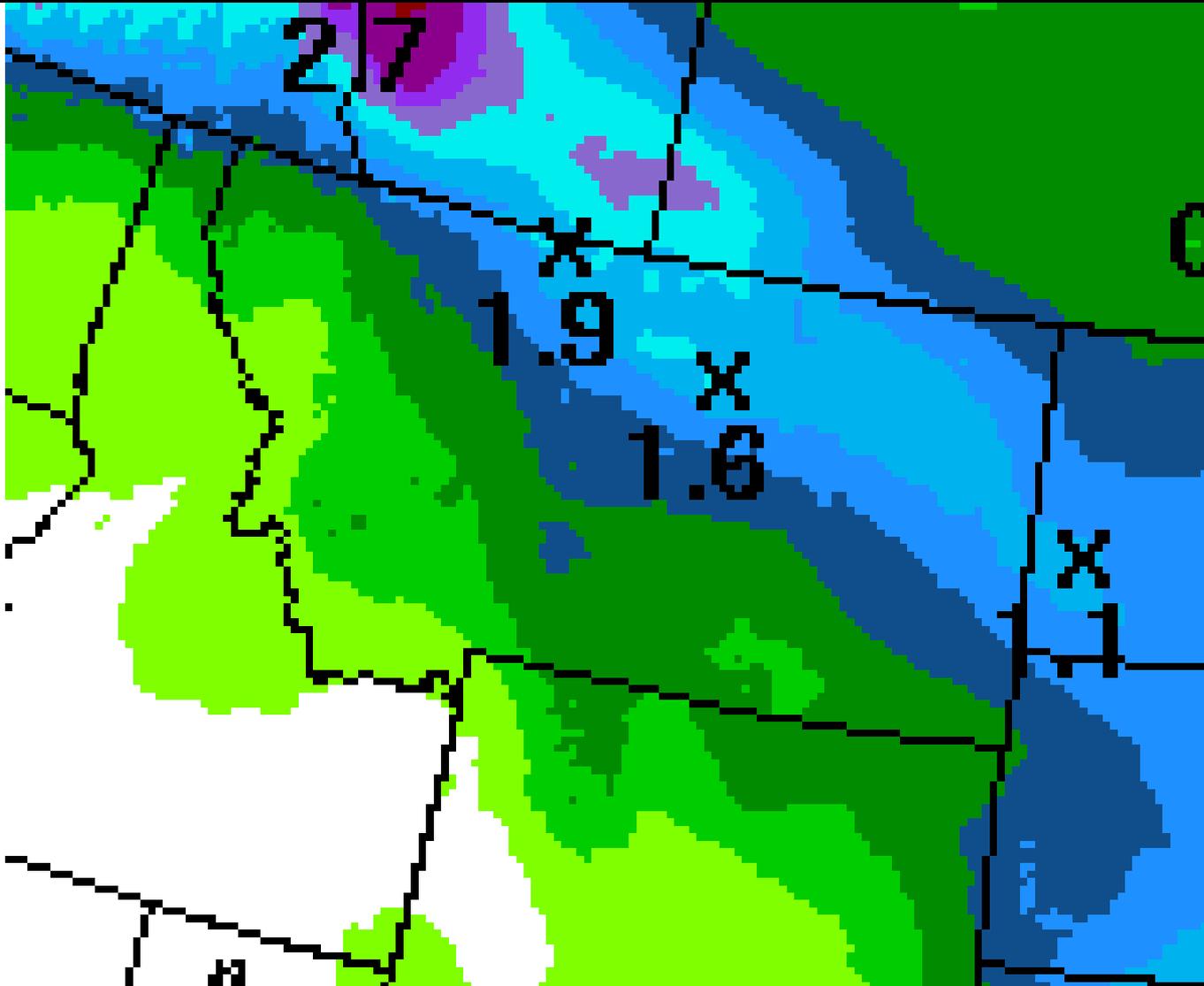
33% to >40% chance of below normal precipitation



# 7-Day WPC Precipitation Forecast



# 7-Day WPC Precipitation Forecast



# In Summary...

- Moisture conditions have been deteriorating across southern and western Montana prompting a response in National Drought Monitor and Montana Drought and Water Supply Conditions
- After June, seasonal precipitation begins to decrease
- Current long-range forecasts indicate above normal temperatures from summer into mid-autumn
- El Niño has weakened, giving way to ENSO neutral conditions until late summer when La Niña becomes predominant through winter





[weather.gov](https://www.weather.gov)

[weather.gov/billings](https://www.weather.gov/billings)

[weather.gov/glasgow](https://www.weather.gov/glasgow)

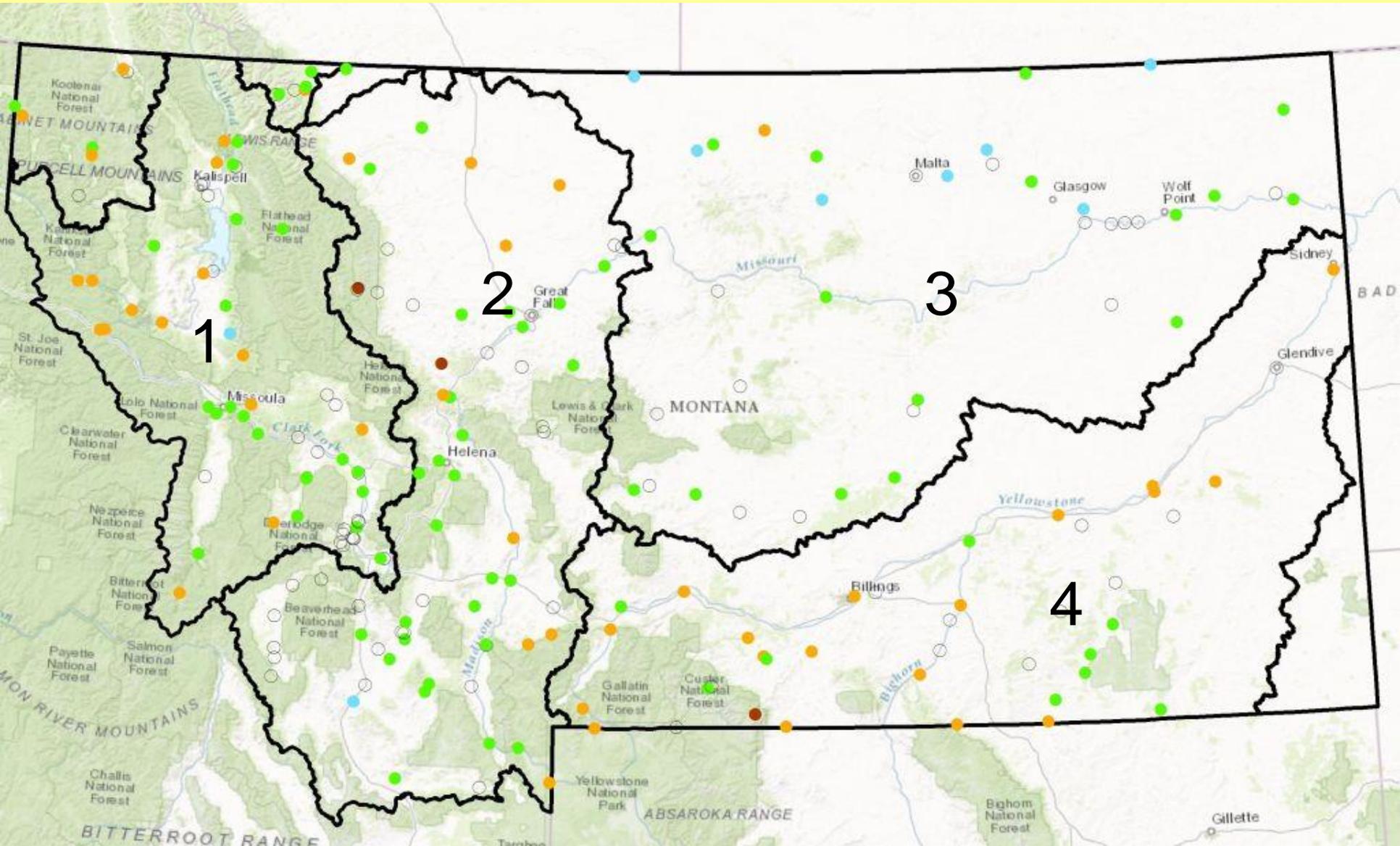
[weather.gov/missoula](https://www.weather.gov/missoula)

[weather.gov/greatfalls](https://www.weather.gov/greatfalls)

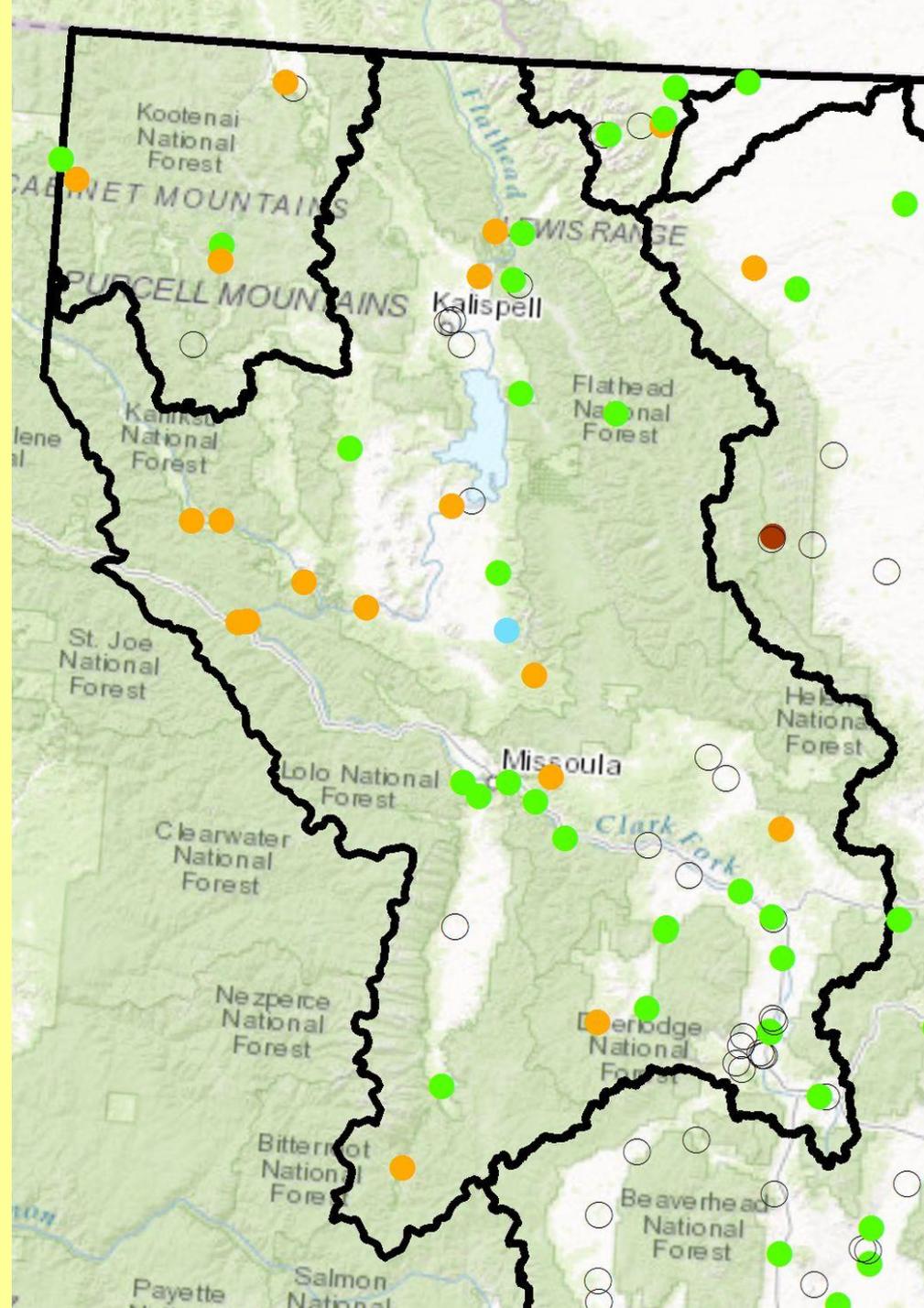
# USGS Streamflows July 12, 2016



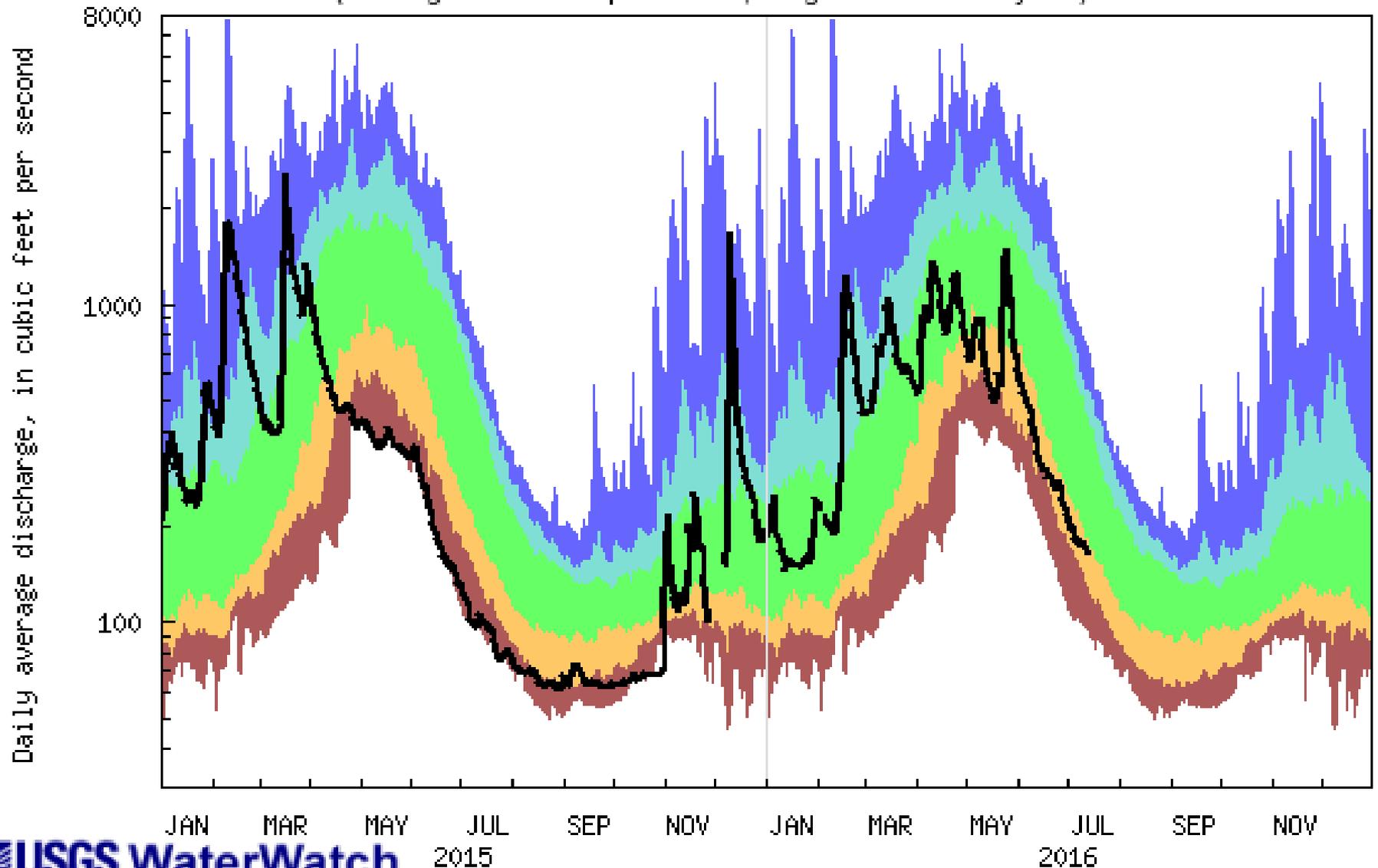
# Major Drainage Basins



# Kootenai – Clark Fork Basins



USGS 12302055 Fisher River near Libby MT  
 (Drainage Area: 842 square miles, Length of Record: 48 years)



**USGS WaterWatch**

2015

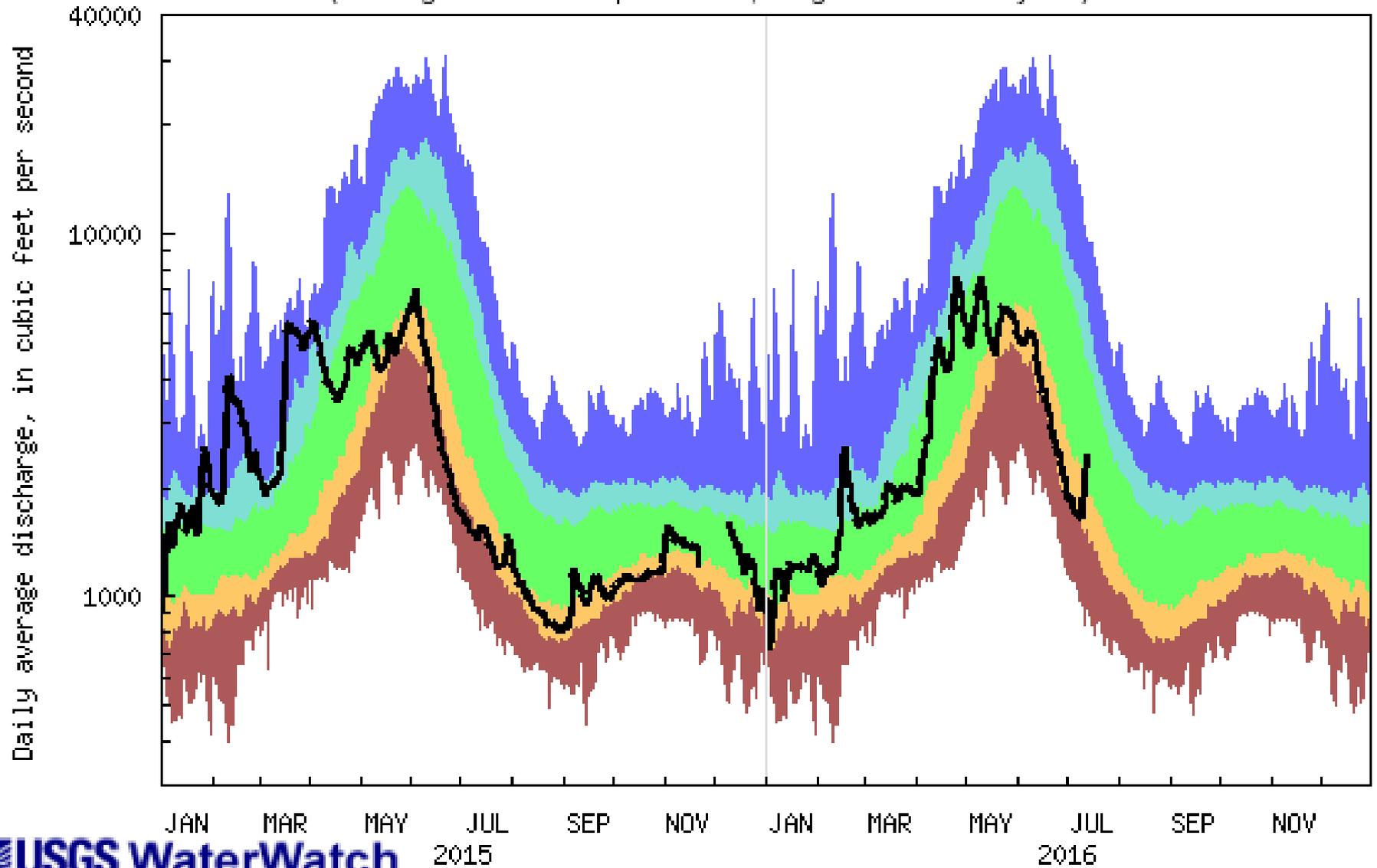
2016

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal

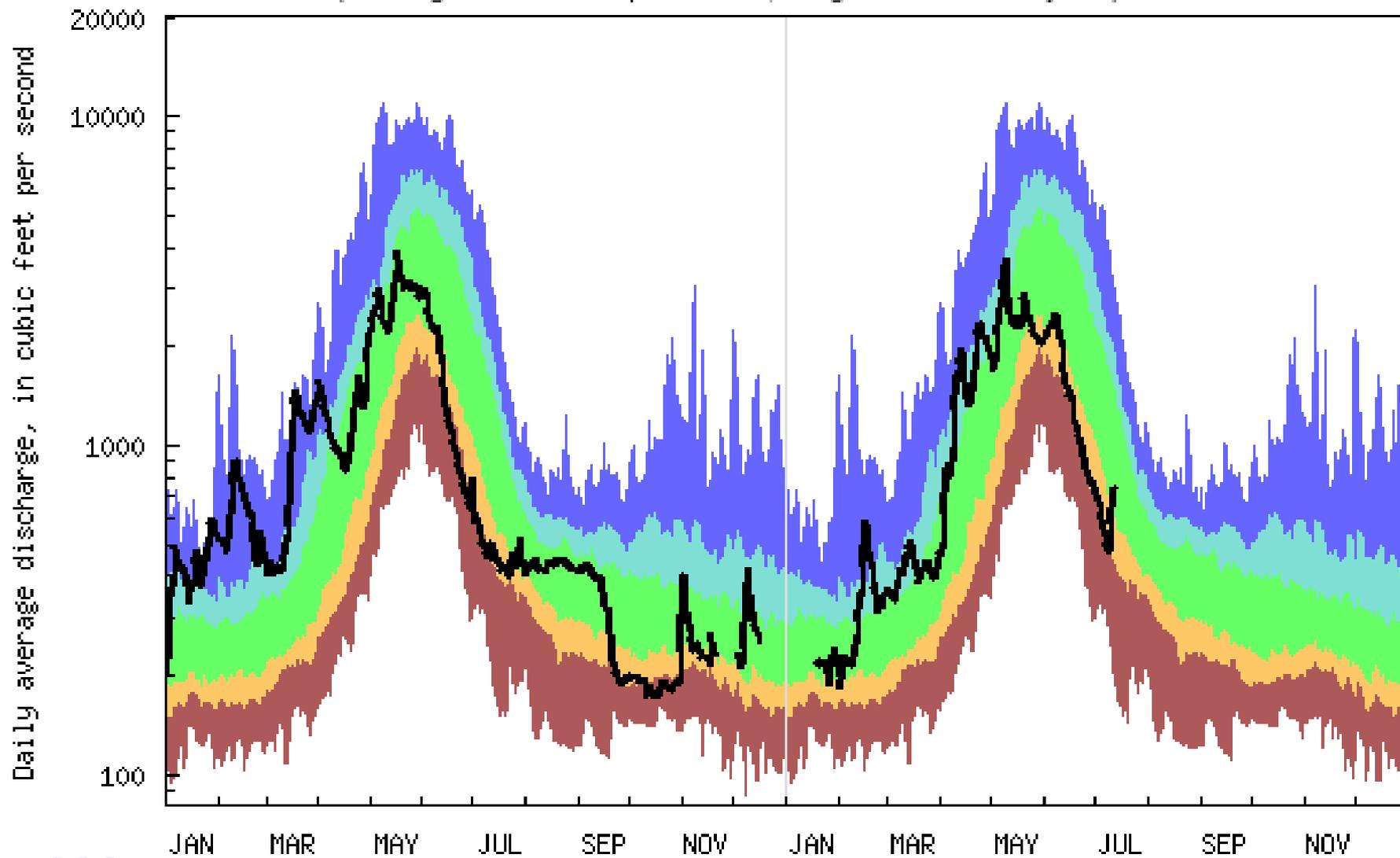
Flow

USGS 12340500 Clark Fork above Missoula MT  
 (Drainage Area: 6021 square miles, Length of Record: 86 years)



Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 12344000 Bitterroot River near Darby MT  
 (Drainage Area: 1050 square miles, Length of Record: 78 years)



**USGS WaterWatch**

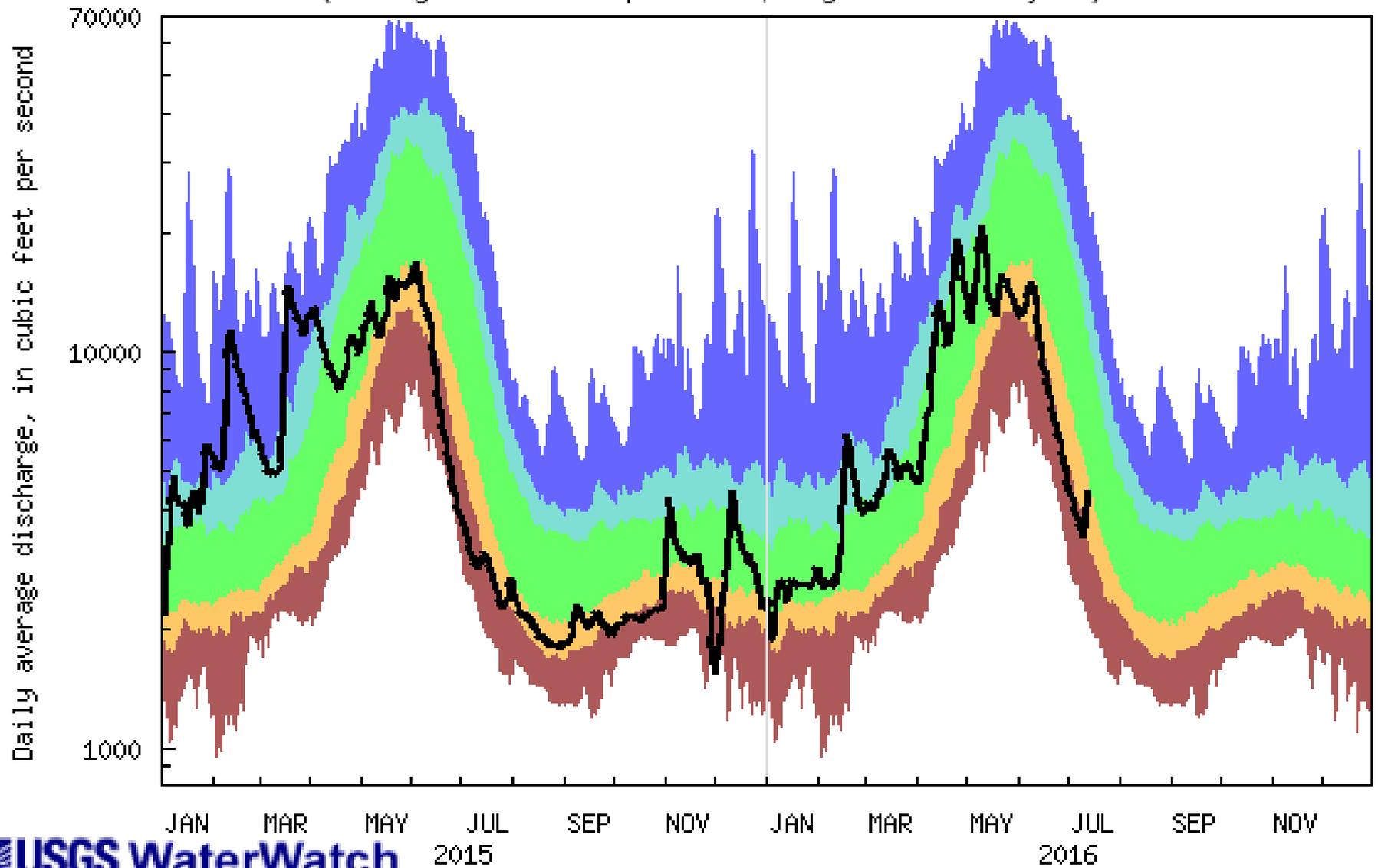
2015

2016

*Last updated: 2016-07-13*

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 12354500 Clark Fork at St. Regis MT  
 (Drainage Area: 10728 square miles, Length of Record: 86 years)

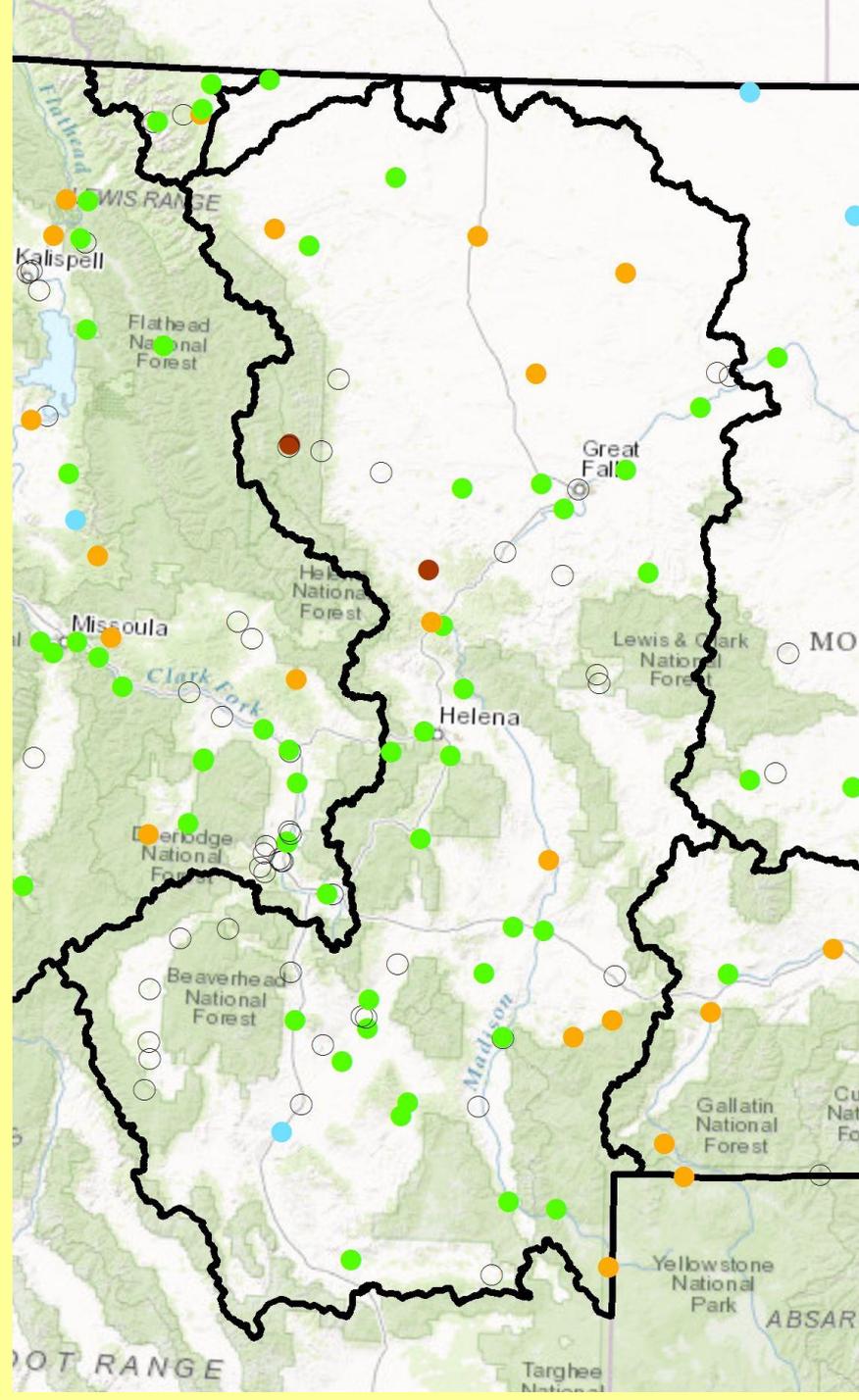


**USGS WaterWatch**

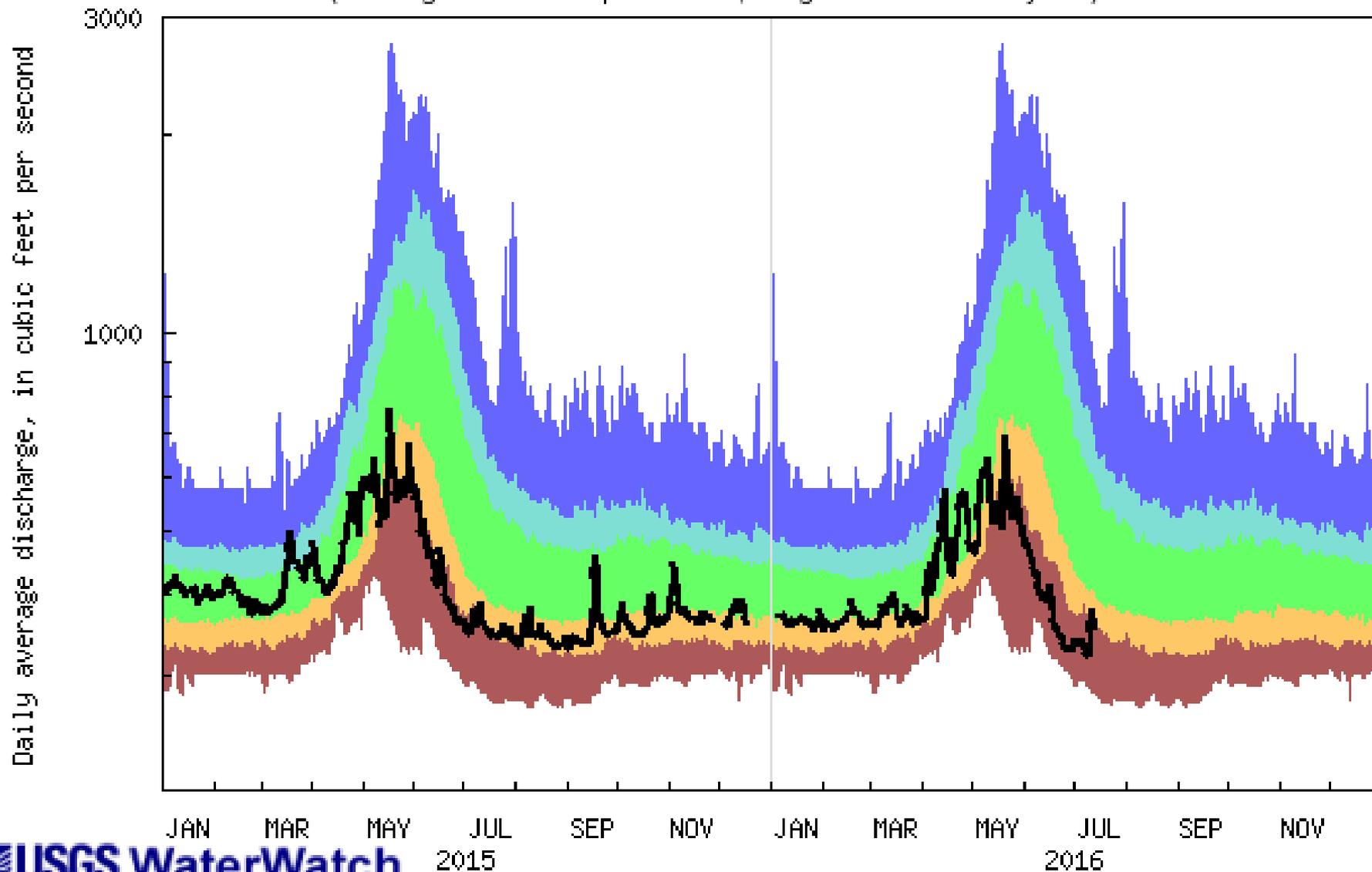
*Last updated: 2016-07-13*

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

# Upper Missouri River Basin



USGS 06037500 Madison River near West Yellowstone, MT  
 (Drainage Area: 435 square miles, Length of Record: 102 years)

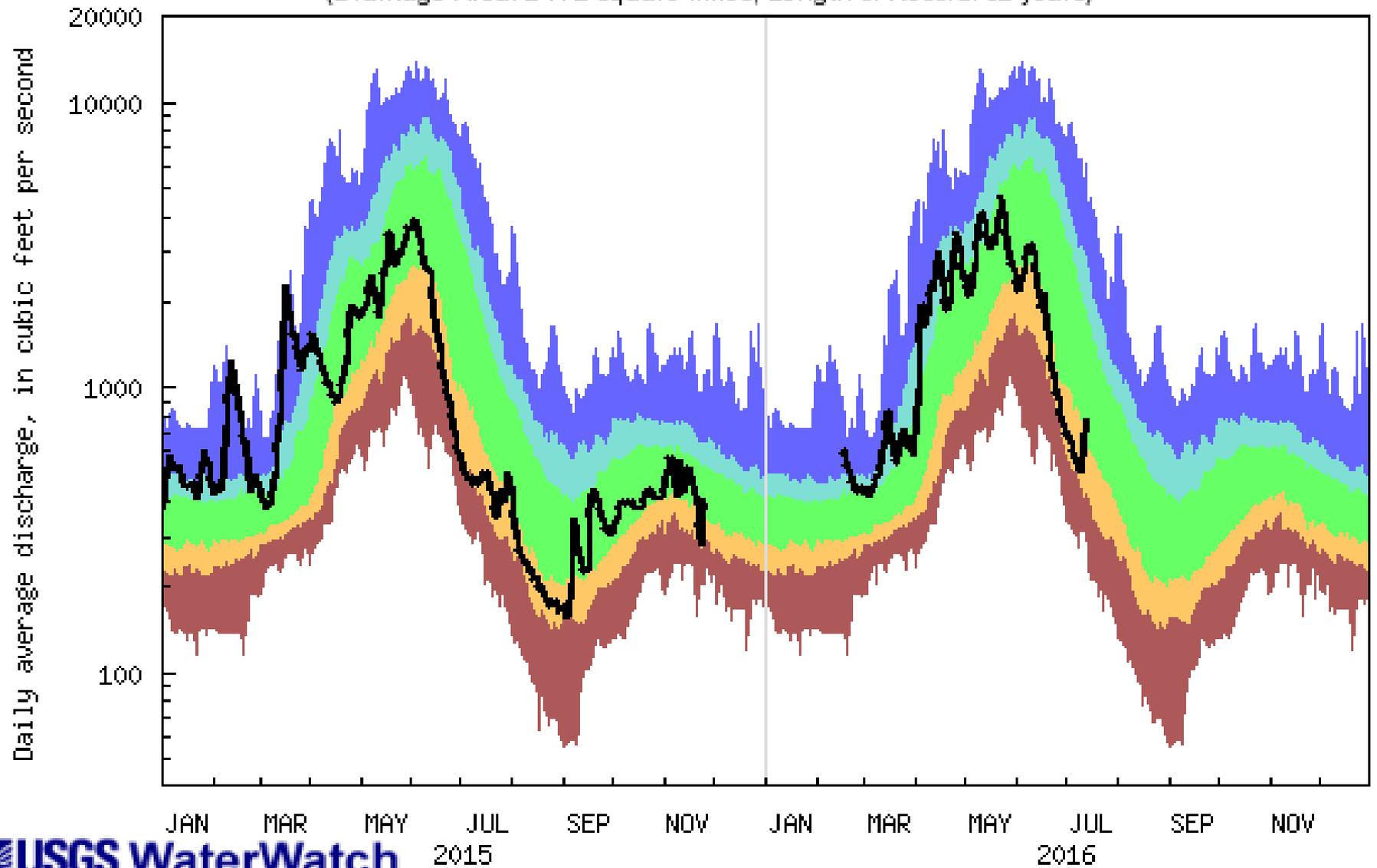


**USGS WaterWatch**

Last updated: 2016-07-13

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 06025600 Big Hole River near Melrose MT  
 (Drainage Area: 2472 square miles, Length of Record: 92 years)

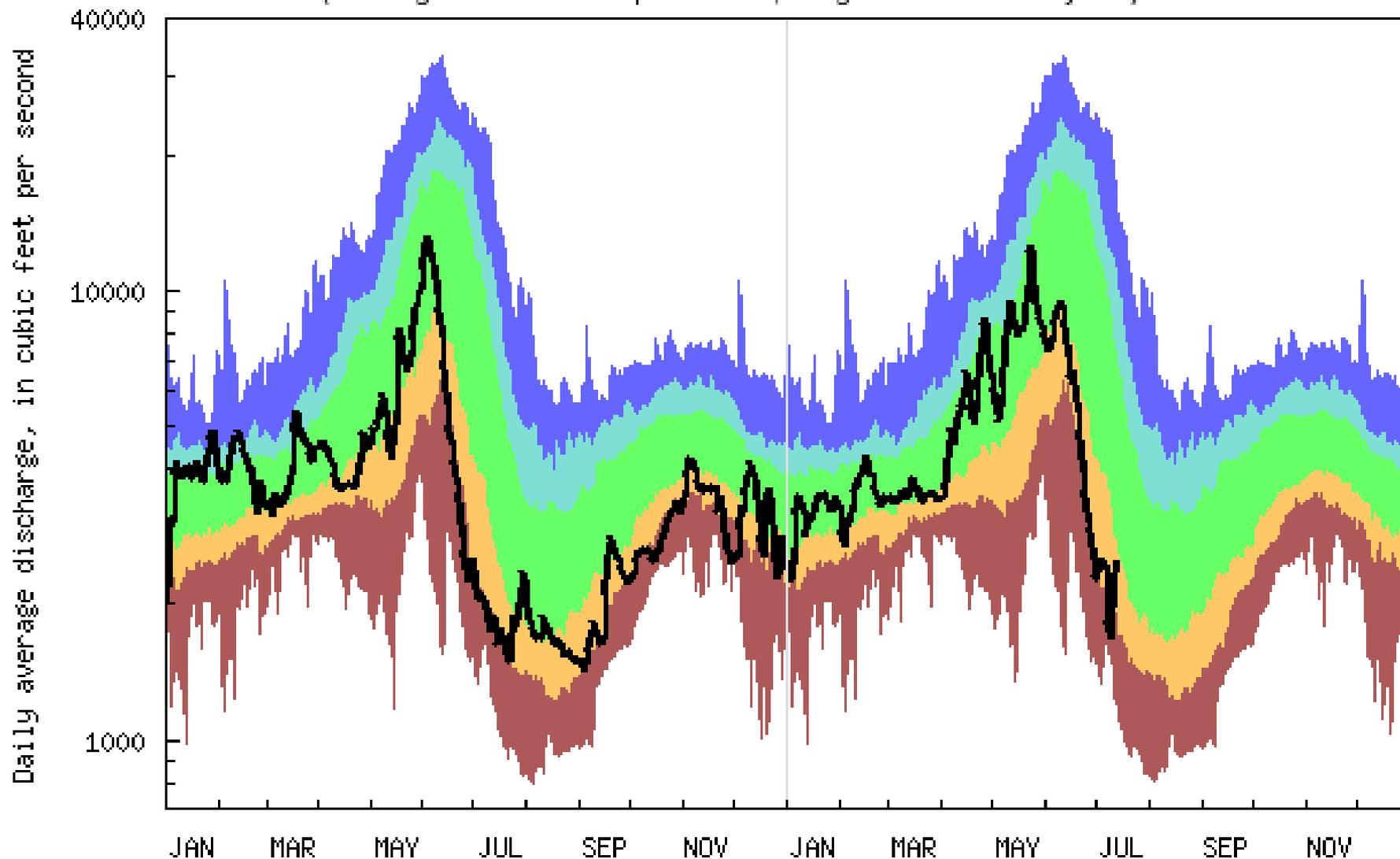


**USGS WaterWatch**

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal

USGS 06054500 Missouri River at Toston MT  
 (Drainage Area: 14641 square miles, Length of Record: 126 years)

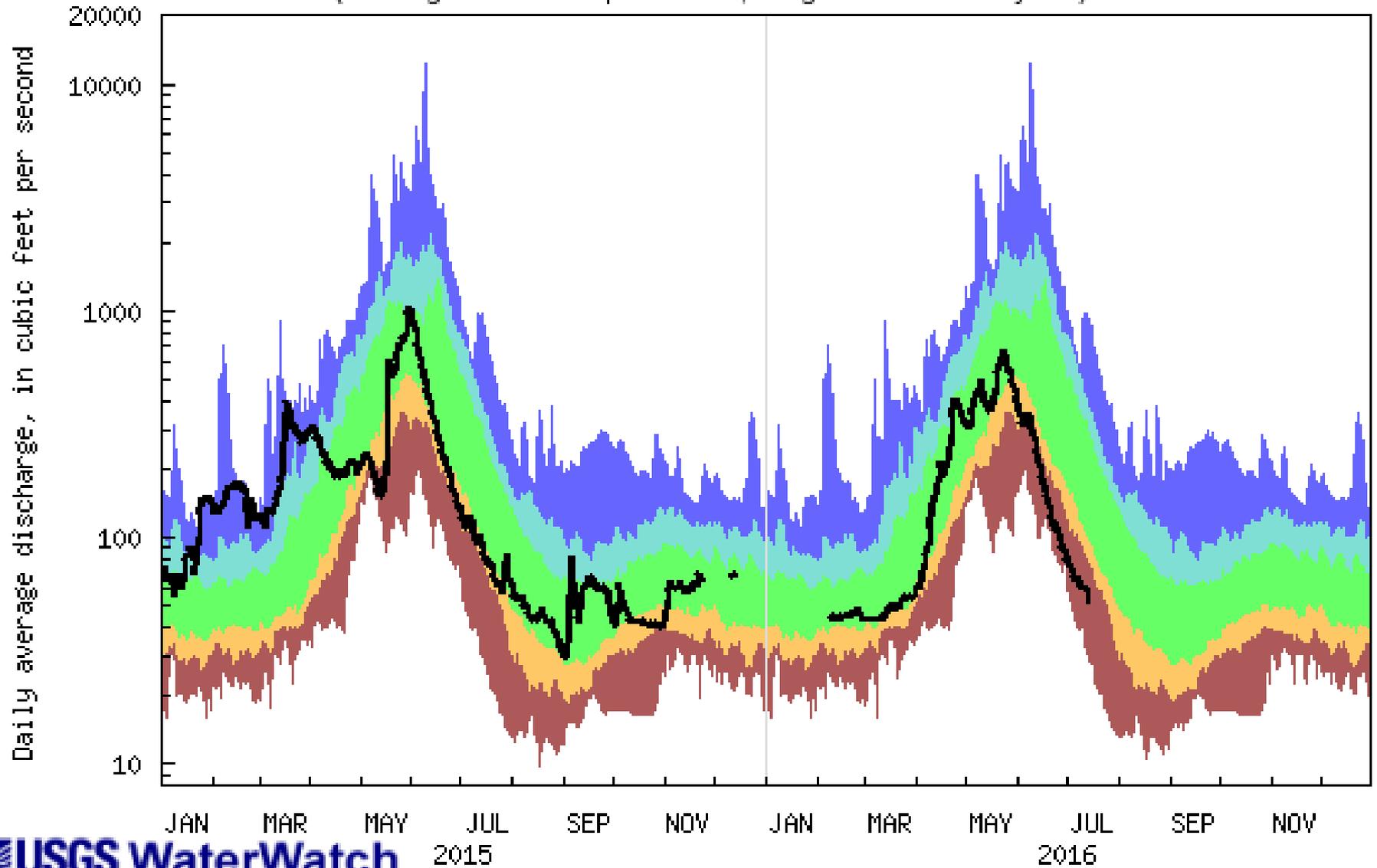


**USGS WaterWatch** 2015

2016  
 Last updated: 2016-07-13

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile - highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

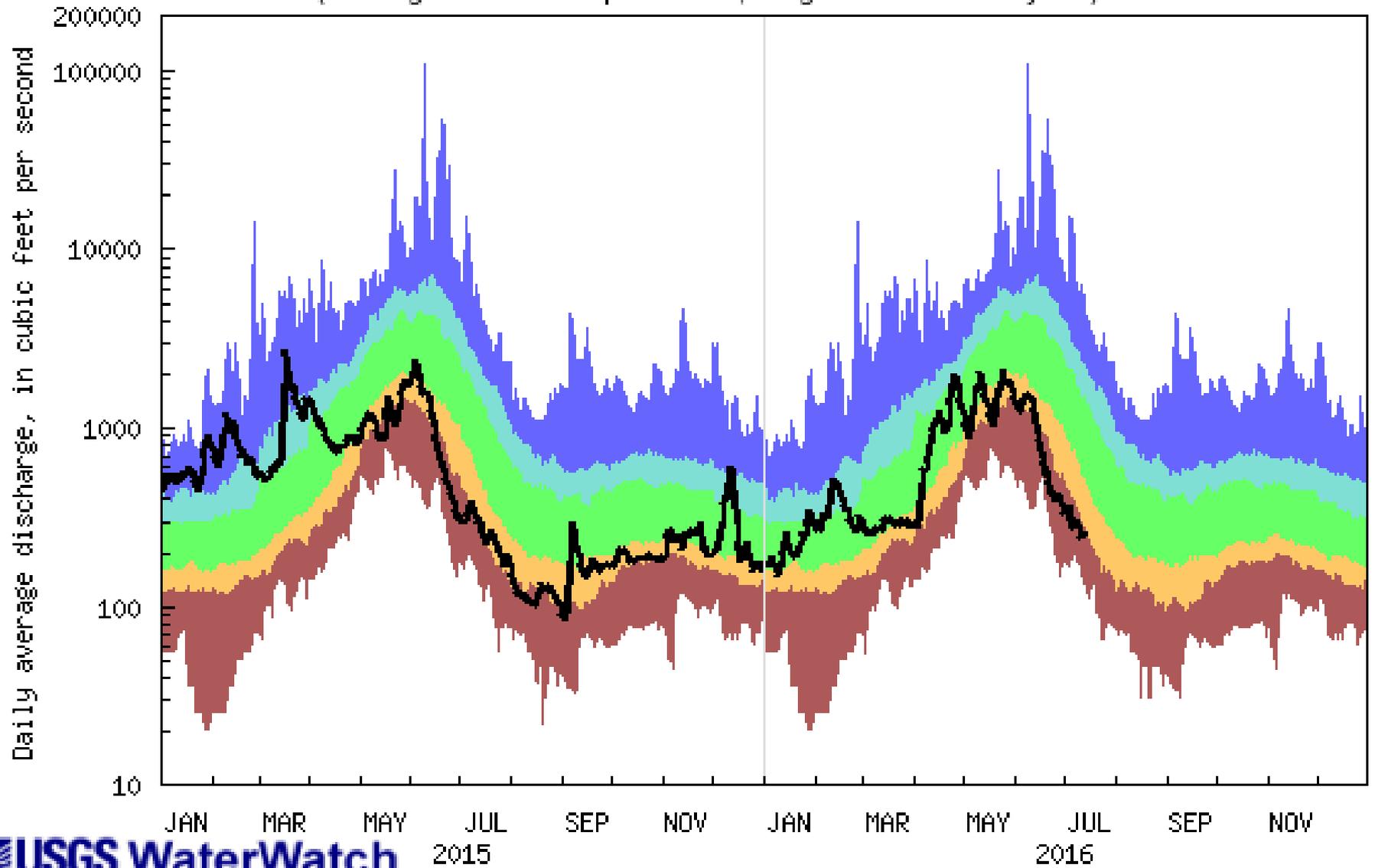
USGS 06073500 Dearborn River near Craig MT  
 (Drainage Area: 322 square miles, Length of Record: 70 years)



Last updated: 2016-07-14

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal

USGS 06099500 Marias River near Shelby MT  
 (Drainage Area: 2716 square miles, Length of Record: 114 years)

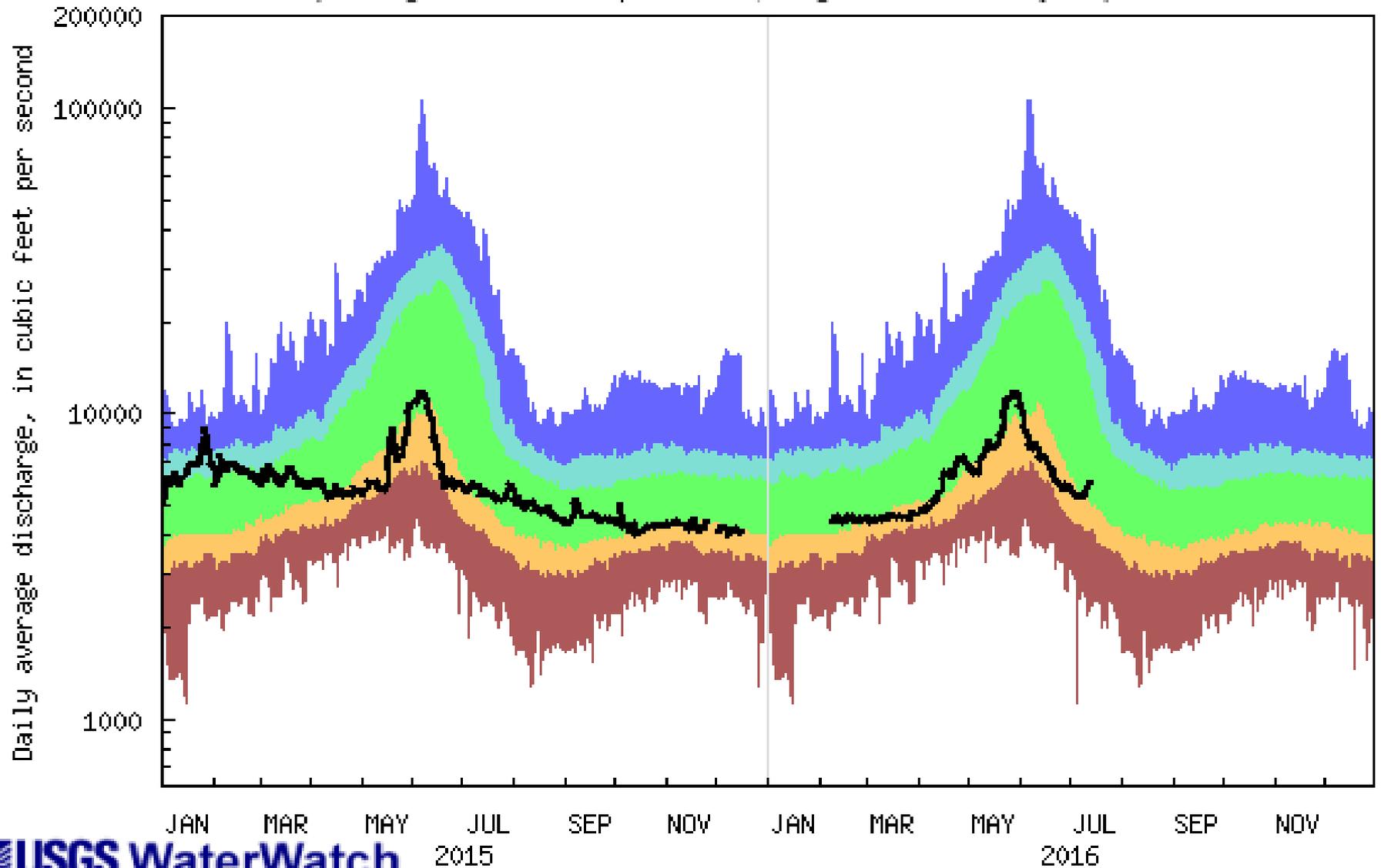


**USGS WaterWatch**

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal

USGS 06090800 Missouri River at Fort Benton MT  
 (Drainage Area: 24297 square miles, Length of Record: 125 years)

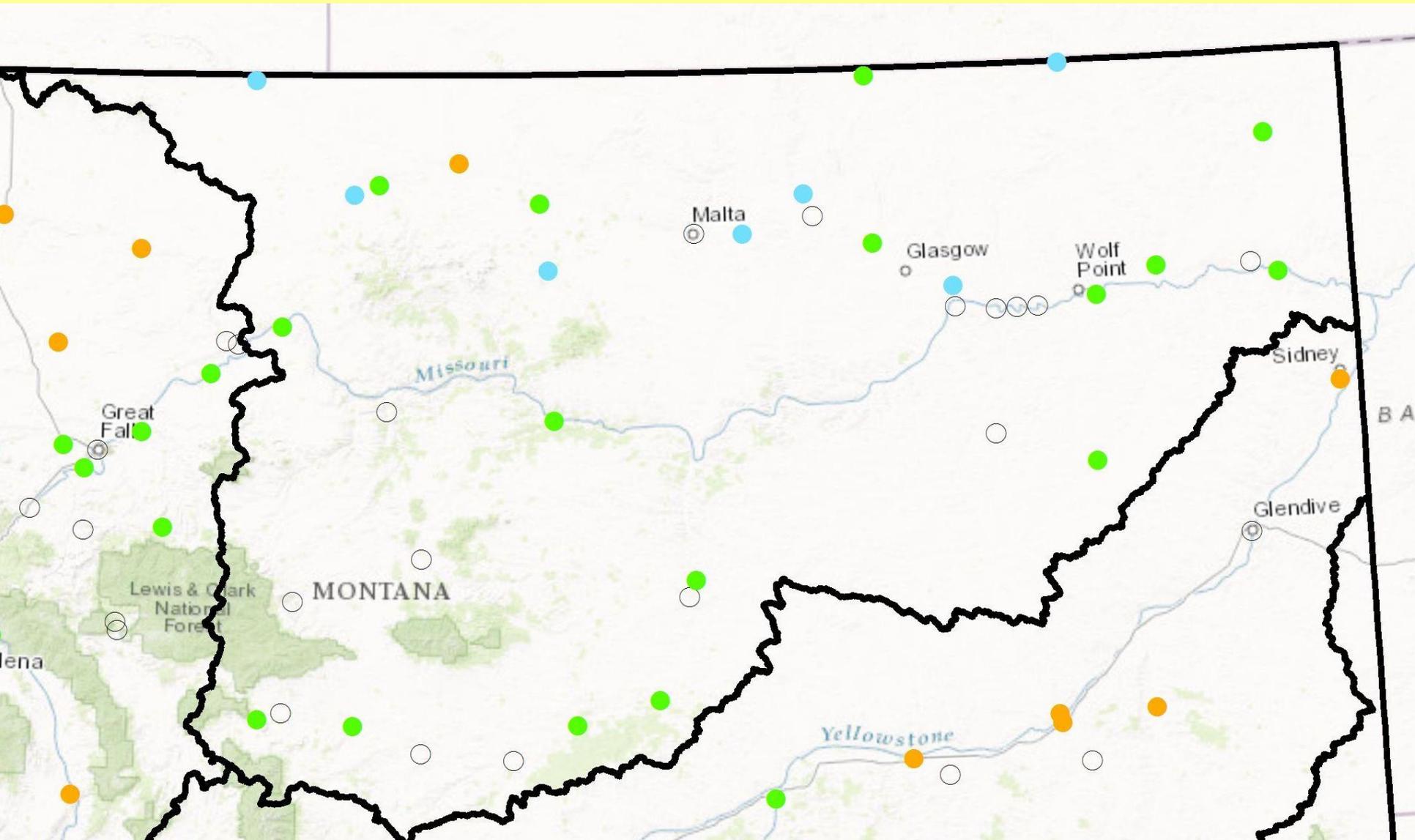


**USGS WaterWatch**

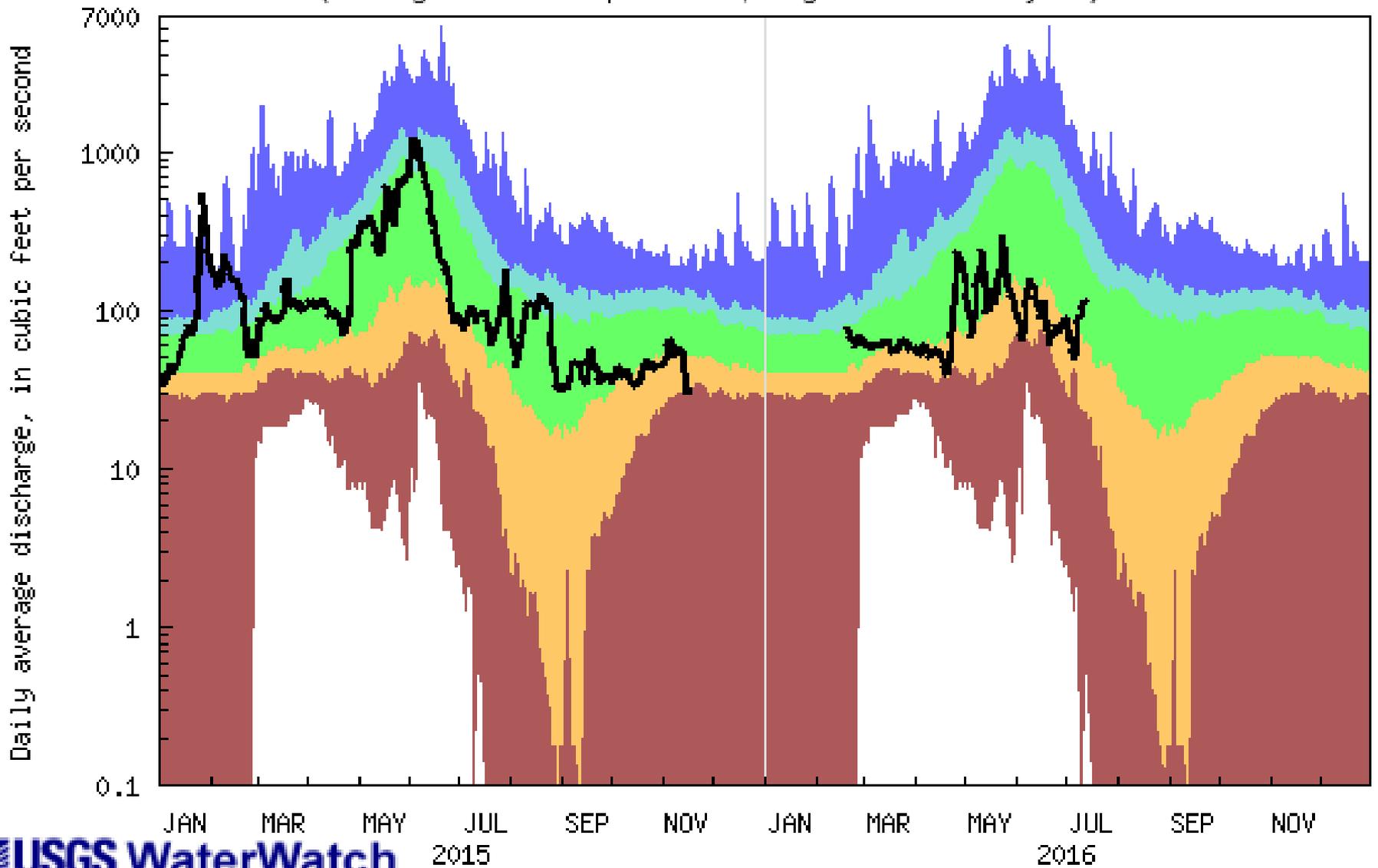
*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal
— Flow				

# Lower Missouri River Basin



USGS 06120500 Musselshell River at Harlowton MT  
 (Drainage Area: 1108 square miles, Length of Record: 108 years)

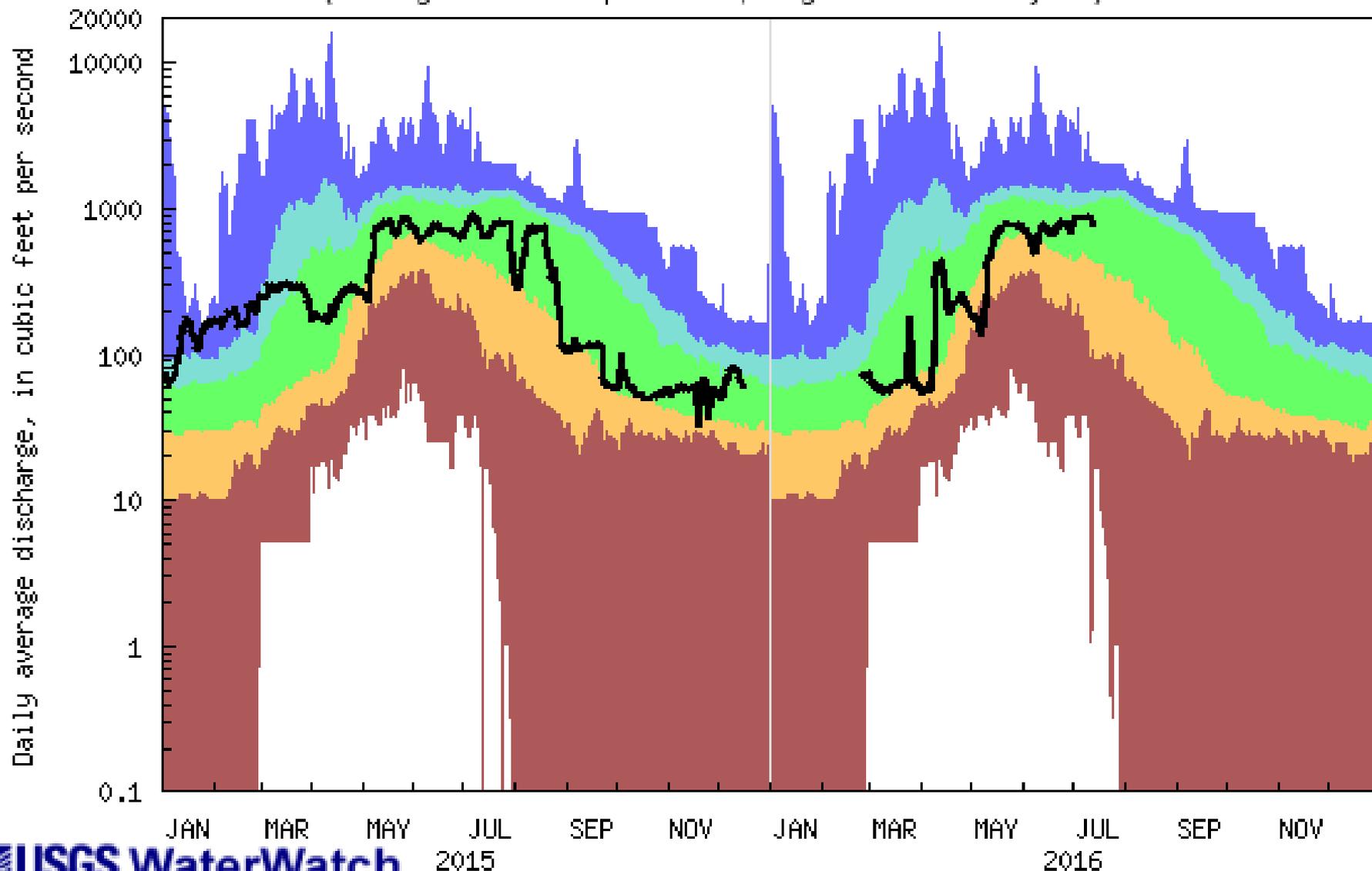


**USGS WaterWatch**

Last updated: 2016-07-13

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 06140500 Milk River at Havre MT  
 (Drainage Area: 5655 square miles, Length of Record: 117 years)

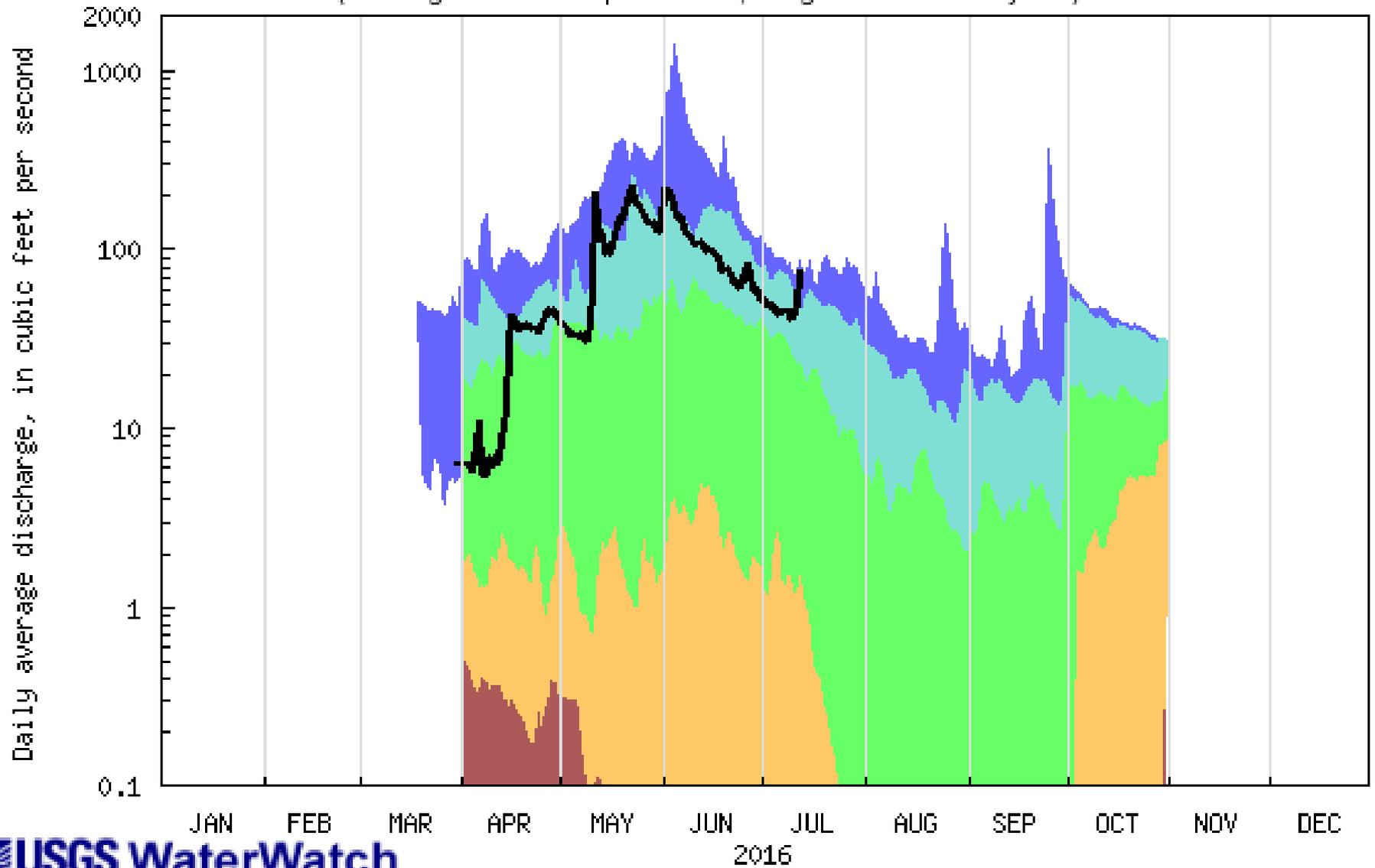


**USGS WaterWatch**

Last updated: 2016-07-13

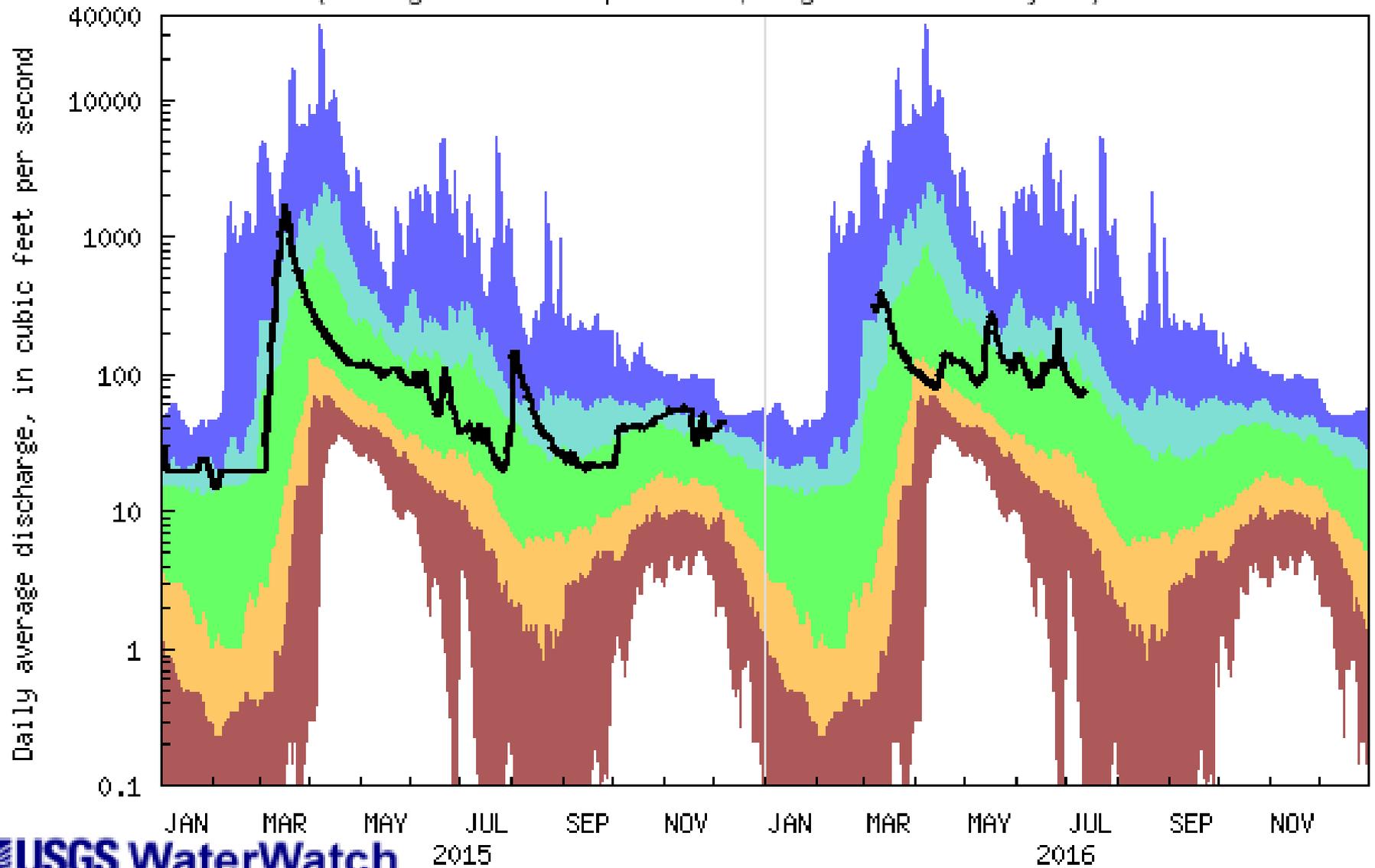
Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 06142400 Clear Creek near Chinook MT  
 (Drainage Area: 135 square miles, Length of Record: 31 years)



Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 06181000 Poplar River near Poplar MT  
 (Drainage Area: 3140 square miles, Length of Record: 107 years)



**USGS WaterWatch**

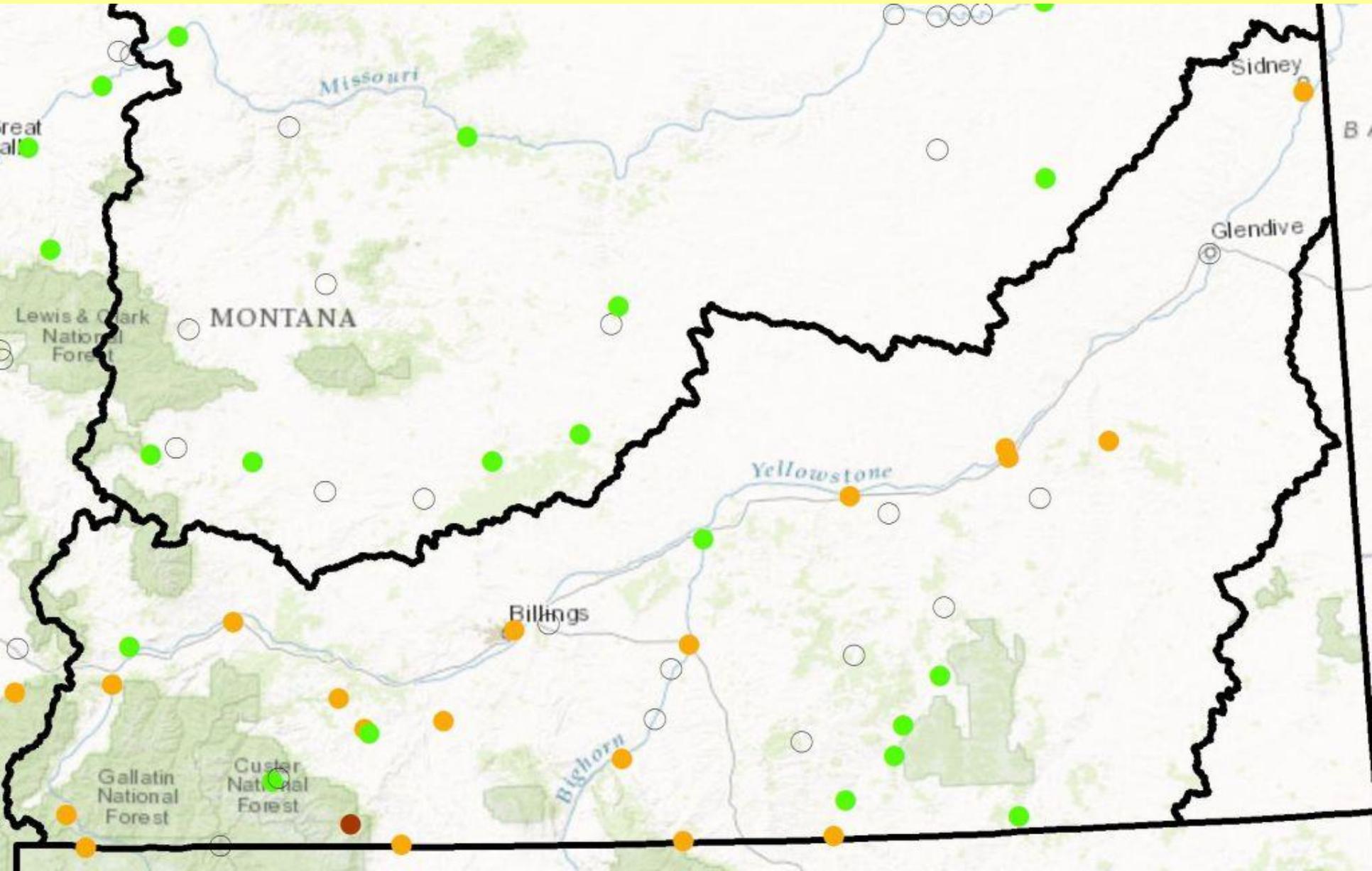
2015

2016

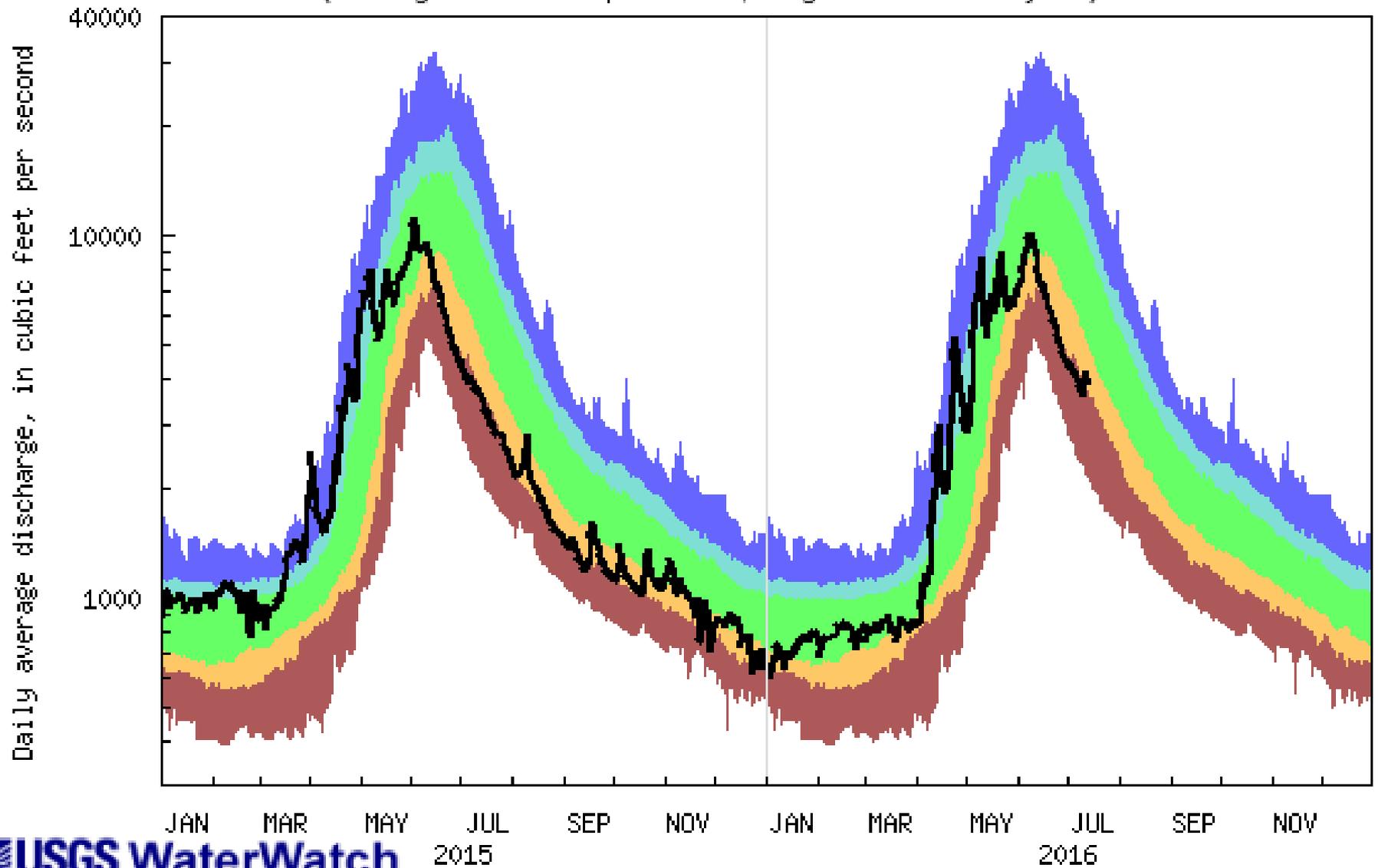
*Last updated: 2016-07-13*

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

# Yellowstone River Basin



USGS 06191500 Yellowstone River at Corwin Springs MT  
 (Drainage Area: 2616 square miles, Length of Record: 126 years)



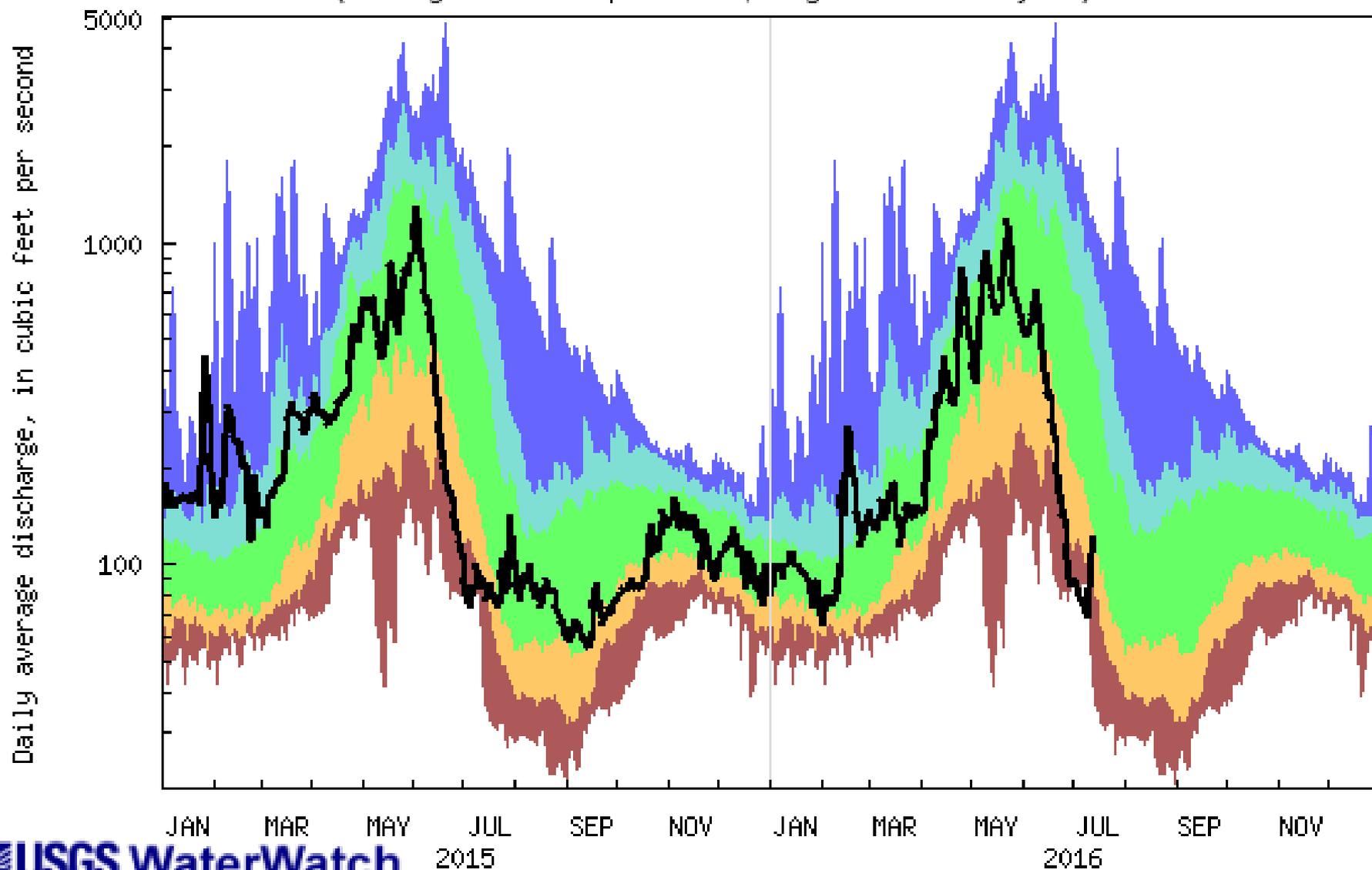
**USGS WaterWatch**

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal

— Flow

USGS 06195600 Shields River nr Livingston MT  
 (Drainage Area: 846 square miles, Length of Record: 37 years)



**USGS WaterWatch**

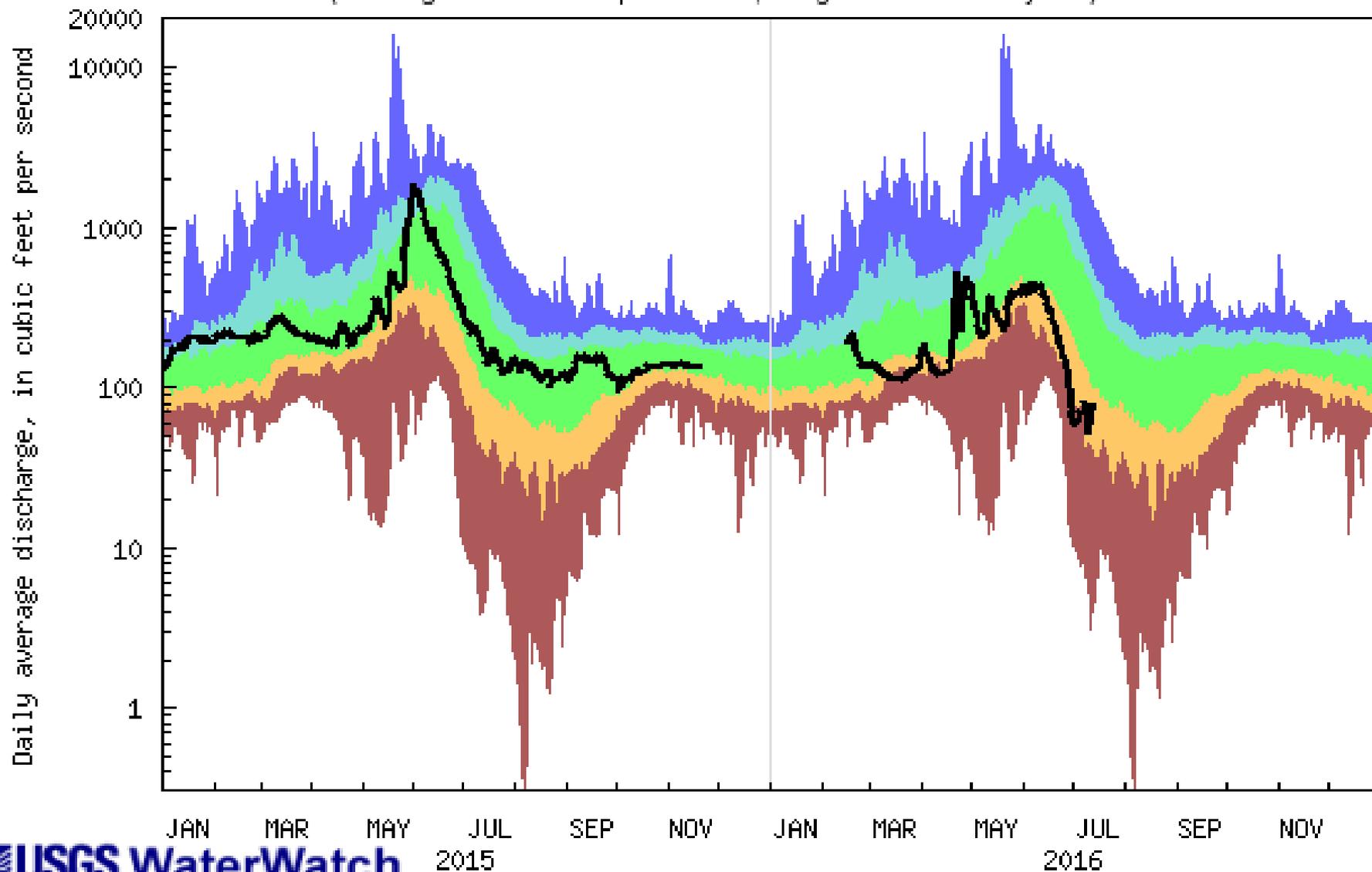
2015

2016

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal
 Flow				

USGS 06294000 Little Bighorn River near Hardin MT  
 (Drainage Area: 1294 square miles, Length of Record: 62 years)



**USGS WaterWatch**

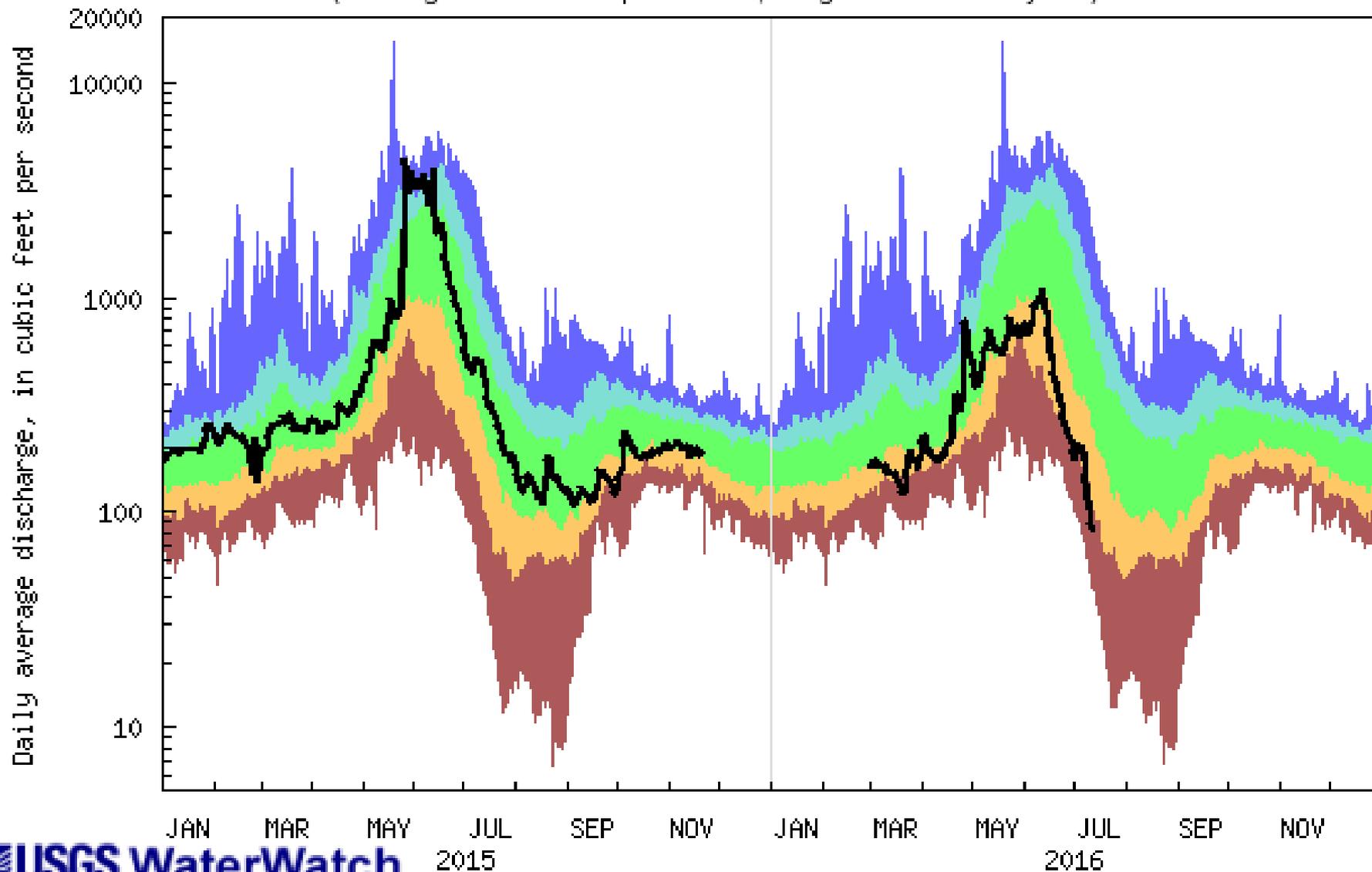
2015

2016

*Last updated: 2016-07-13*

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 06306300 Tongue River at State Line nr Decker MT  
 (Drainage Area: 1451 square miles, Length of Record: 55 years)

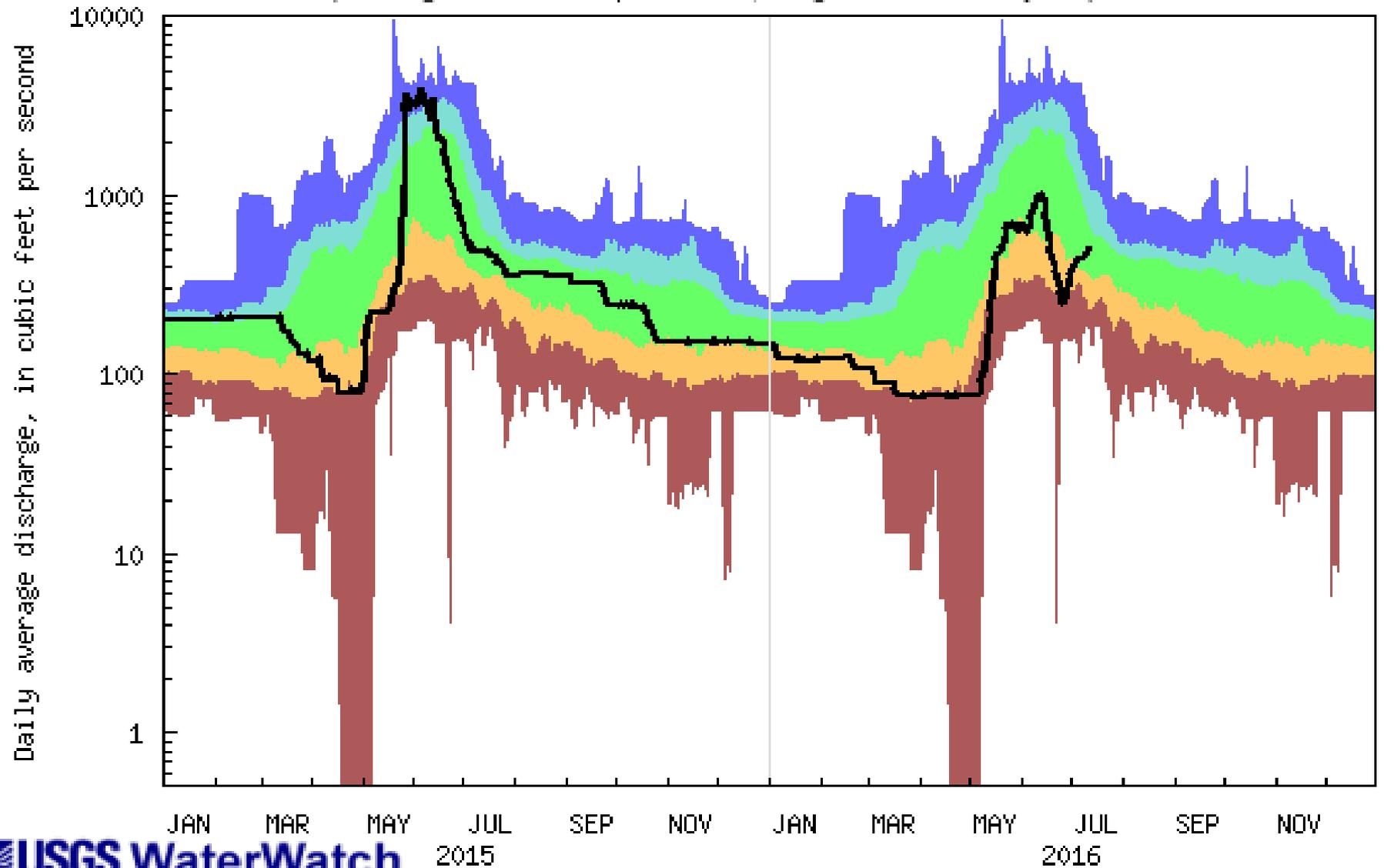


**USGS WaterWatch**

*Last updated: 2016-07-13*

Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

USGS 06307500 Tongue River at Tongue R Dam nr Decker MT  
 (Drainage Area: 1783 square miles, Length of Record: 76 years)



**USGS WaterWatch**

2015

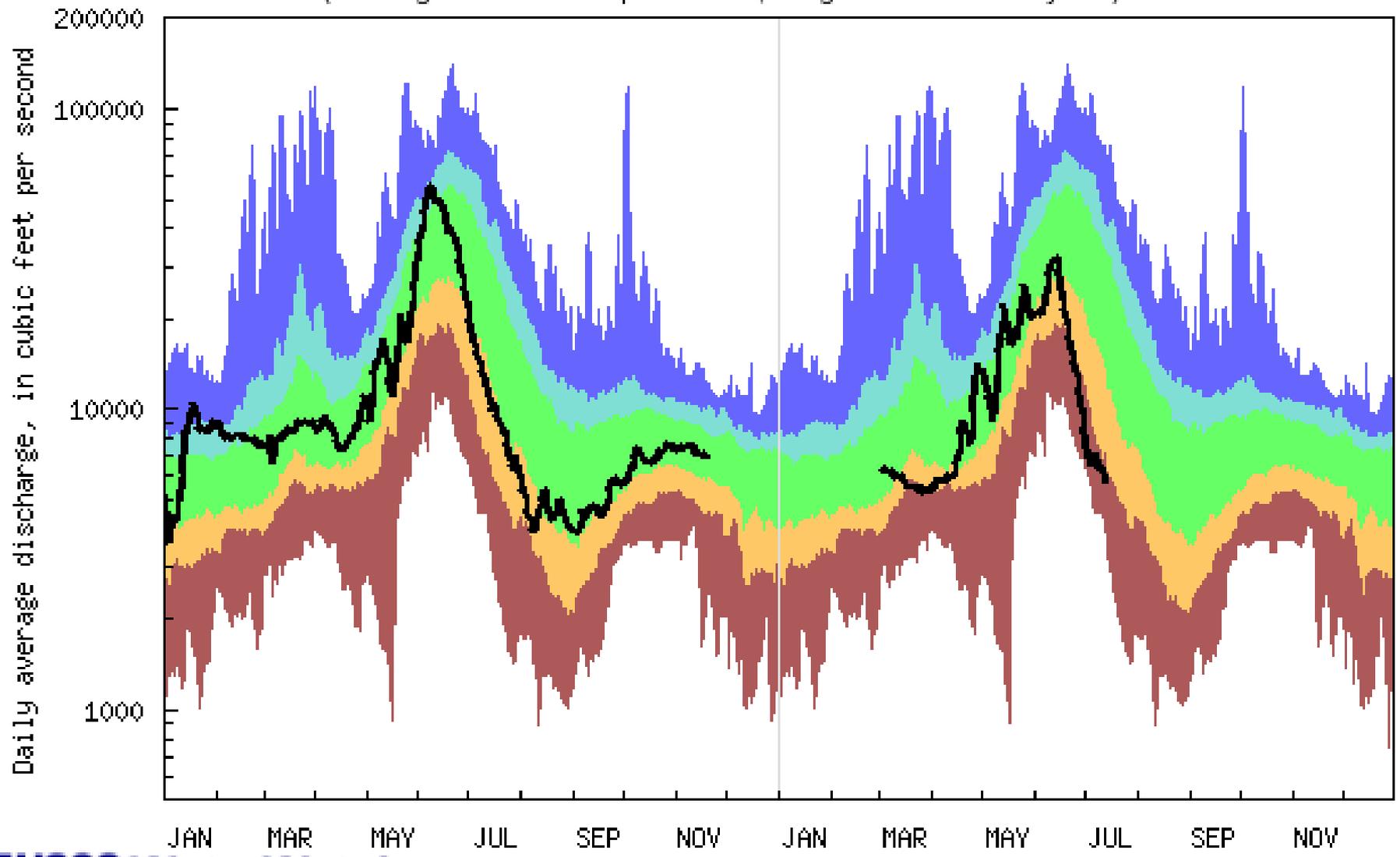
2016

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal

Flow

USGS 06329500 Yellowstone River near Sidney MT  
 (Drainage Area: 69099 square miles, Length of Record: 105 years)



**USGS WaterWatch**

2015

2016

*Last updated: 2016-07-13*

Explanation - Percentile classes				
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest
Much below normal	Below normal	Normal	Above normal	Much above normal
— Flow				



USGS Home Page: <http://usgs.gov>

NwisWeb: <http://water.usgs.gov/mt/nwis>

Access to streamflow (realtime and historical), water quality, and ground water information.

Wyoming-Montana WSC Home Page: <http://wy-mt.water.usgs.gov/>

Montana Current Streamflow Conditions

<http://waterdata.usgs.gov/mt/nwis/current/>



**Governor's Drought & Water Supply Advisory  
Committee  
July NRCC Update**

Harold Gemmell, Direct Protection Fire Coordinator  
DNRC

[hgemmell@mt.gov](mailto:hgemmell@mt.gov) 406 329-4996



Marshall Lake Fires



Elk Trails Loop Fire



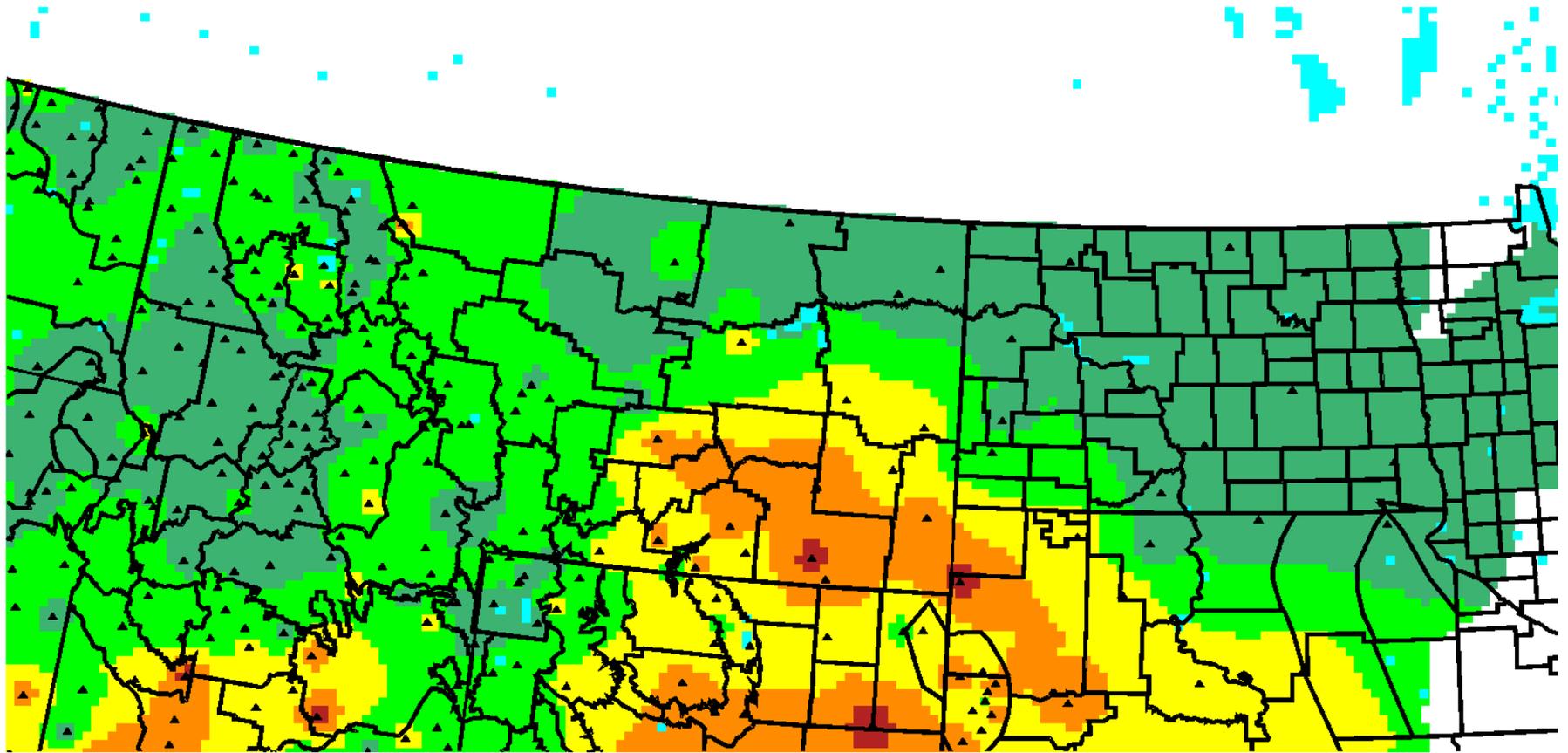
Marking the Drop







# Northern Rockies Observed Fire Danger Class: 12-Jul-16 (Fire Weather Zones)



## LEGEND

- |             |           |      |         |
|-------------|-----------|------|---------|
| Green       | Low       | Red  | Extreme |
| Light Green | Moderate  | Cyan | Water   |
| Yellow      | High      |      |         |
| Orange      | Very High |      |         |

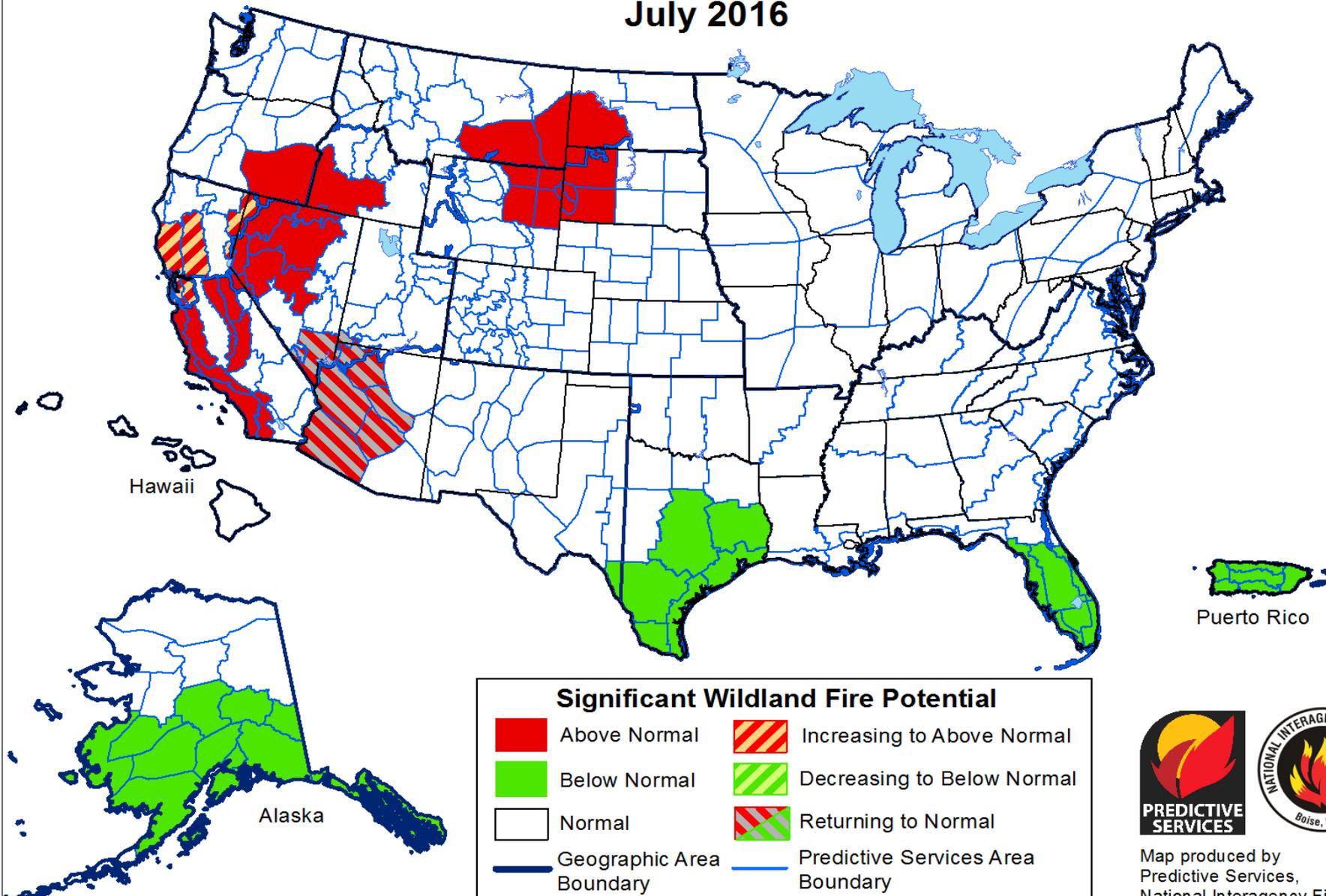
**FireLab**  
MISSOULA, MONTANA



WFAS-MAPS National Interagency Fire Center



# Significant Wildland Fire Potential Outlook July 2016

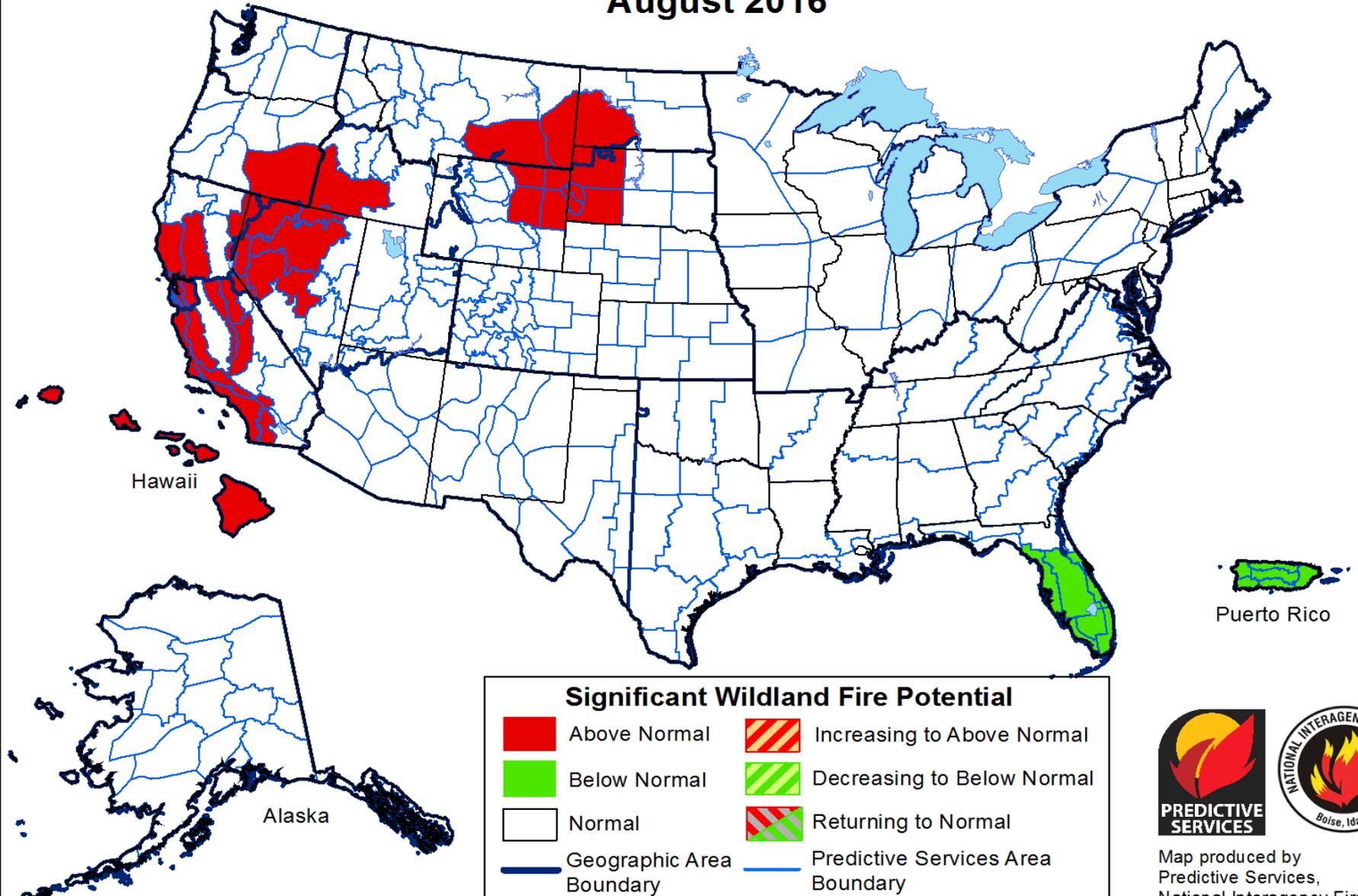


Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur. Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.



Map produced by  
Predictive Services,  
National Interagency Fire Center  
Boise, Idaho  
Issued July 1, 2016  
Next issuance August 1, 2016

# Significant Wildland Fire Potential Outlook August 2016

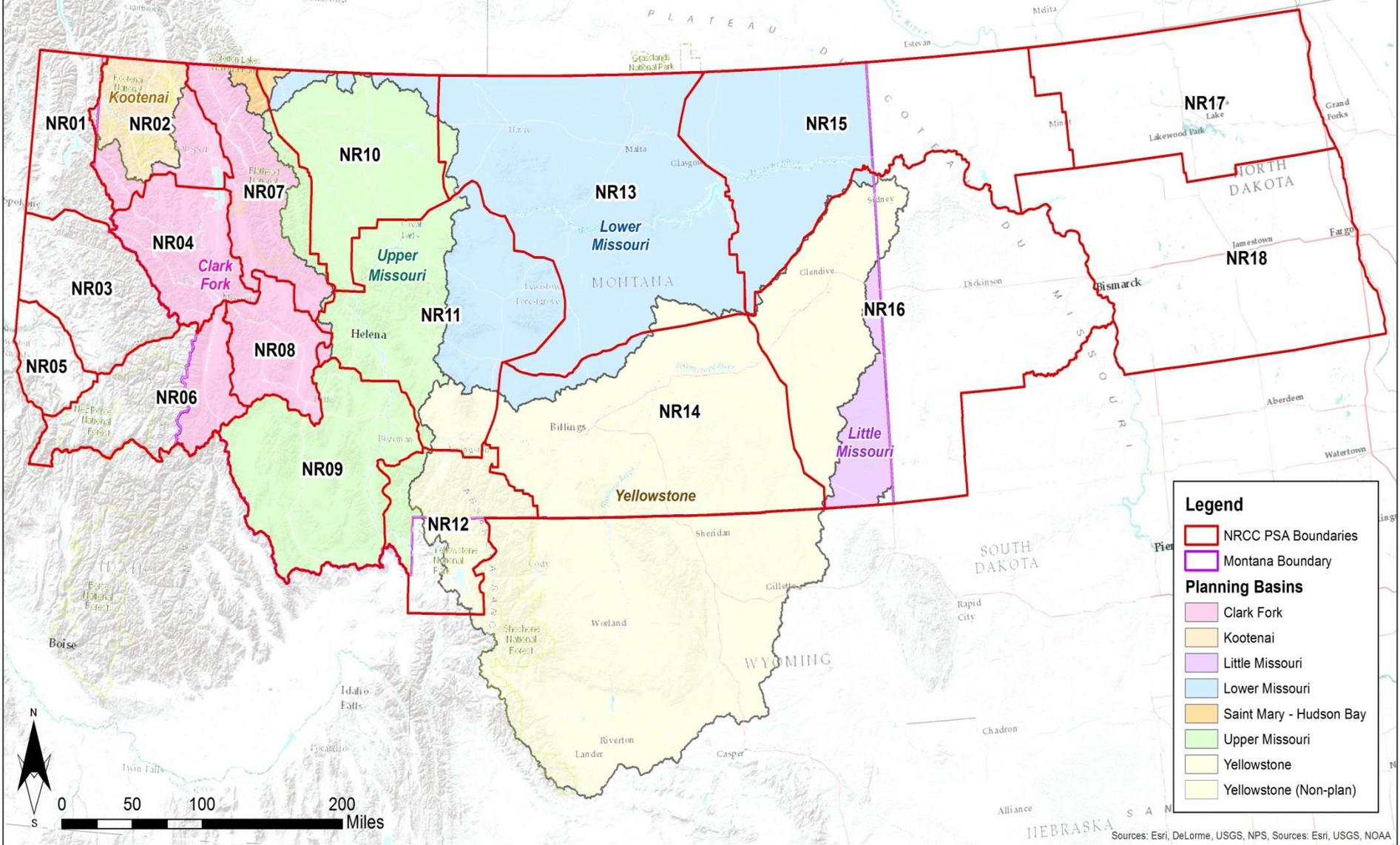


Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur. Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.



Map produced by  
Predictive Services,  
National Interagency Fire Center  
Boise, Idaho  
Issued July 1, 2016  
Next issuance August 1, 2016

# NRCC PSA Boundaries & Montana State Water Planning Basins

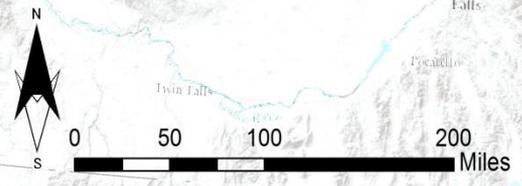


**Legend**

- NRCC PSA Boundaries
- Montana Boundary

**Planning Basins**

- Clark Fork
- Kootenai
- Little Missouri
- Lower Missouri
- Saint Mary - Hudson Bay
- Upper Missouri
- Yellowstone
- Yellowstone (Non-plan)



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

# River Basins Summary

- ▣ Kootenai – Moderate Fire Danger,  
Preparedness Level 2
- ▣ Clark Fork – Moderate Fire Danger,  
Preparedness Level 1 – 2
- ▣ Upper Missouri – Low-Moderate Fire Danger,  
Preparedness Level 1 – 2
- ▣ Lower Missouri – Low-Moderate Fire Danger,  
Preparedness Level 1 – 2
- ▣ Yellowstone – High-Very High Fire Danger,  
Preparedness Level 2





Wednesday, May 22, 2013

**INCIDENT INFORMATION**

**PREDICTIVE SERVICES**

- Intelligence
- Weather
- Fuels/Fire Danger
- Outlooks

**LOGISTICS / DISPATCH**

- Dispatch Operations
- Aviation
- Crews
- Equipment/Supplies
- Overhead

**ADMINISTRATIVE**

- Northern Rockies Coordinating Group
- Policy and Reports
- Incident Business Management
- Safety Management
- Software Applications
- Training

**RELATED LINKS**

- National
- Area

## Welcome to the NORTHERN ROCKIES COORDINATION CENTER

The Northern Rockies Coordination Center (NRCC) is the interagency focal point for coordinating the mobilization of resources for wildland fire and other all-hazard incidents throughout the Northern Rockies Area and, when necessary, for assignment throughout the United States. Located in Missoula, Montana, the Center also provides Intelligence and Predictive Services related products for use by the wildland fire community for purposes of wildland fire and incident management decision-making.

There are five primary components to the NRCC website.

- [Incident Information](#) provides general information on large wildland fires, fire restrictions and closures, and other relevant activity throughout the Geographic Area.
- [Predictive Services](#) provides operational products and links to incident situation information, maps, resources, current fire weather conditions, forecasts, fuels, fire behavior as well as daily, weekly and monthly fire weather/fire danger outlooks.
- [Logistics/Dispatch](#) provides detailed operation and information links for aviation, crews, equipment and overhead, including Incident Management Teams.
- [Administrative](#) provides fire and incident management tools and links including policies and reports, business management, safety, software applications, and training.
- [Related Links](#) component provides links to related Internet websites within the Northern Rockies Area and nationally.



**BULLETIN BOARD**

**SITUATION**

**PREPAREDNESS LEVELS**

Northern Rockies PL: **1**  
National PL: **1**

[Situation Reports](#)

[Year-to-Date & Historical Wildfire Data](#)

••• [Restrictions & Closures](#) •••

**SAFETY ALERTS**

[NRGA Landscape Mortality Safety Alert](#)  
[NRGA Landscape Mortality Pocket Card](#)

[Coal Seam Fires Safety](#)

COOPERATING FEDERAL, STATE AND OTHER AGENCIES IN THE NORTHERN ROCKIES AREA





# *Montana Fish, Wildlife & Parks*

## Drought Impacts and Response

**Stephen Begley**

**Water Conservation Specialist**

**Governor's Drought and Water Supply Advisory Committee Meeting**

**July 14, 2016**

# Fishing Restrictions

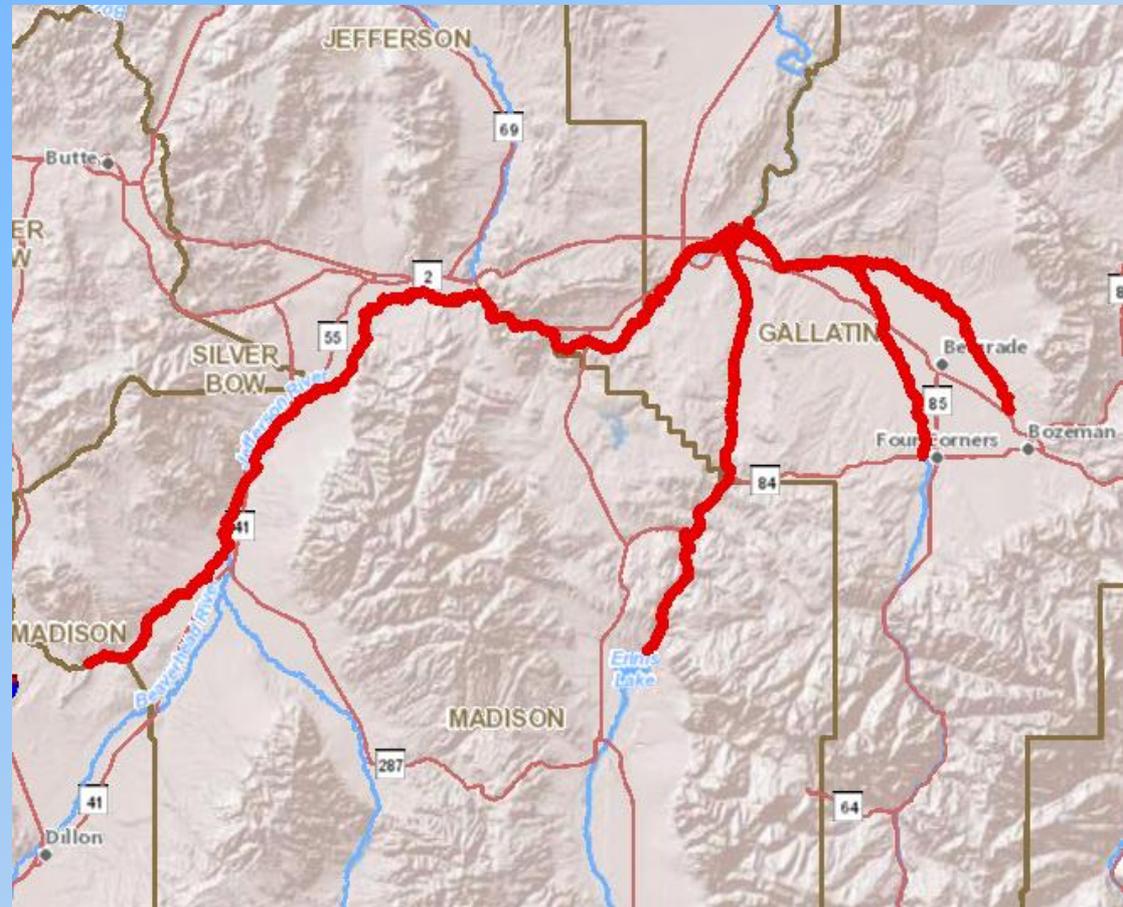
## Hoot Owl Closures

(2pm-12am):

- Lower Big Hole
- Jefferson River
- Madison River
- Gallatin River
- E. Gallatin River

## Reopened:

- Upper Reaches of the Big Hole River
- Ruby River
- Beaverhead River

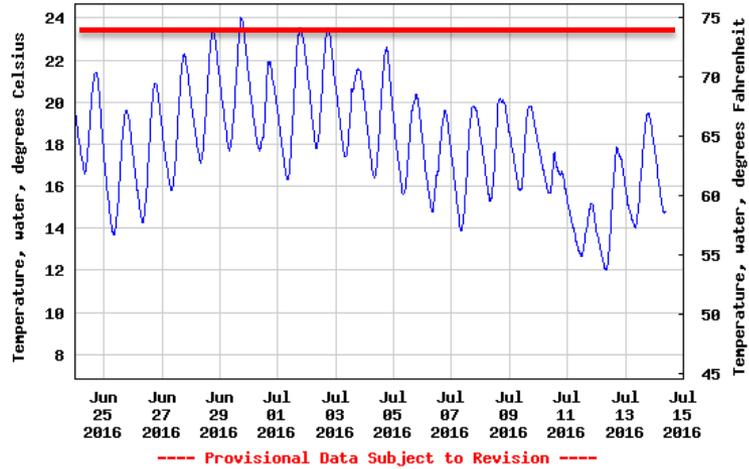


<http://fwp.mt.gov/gis/maps/fishingGuide/>

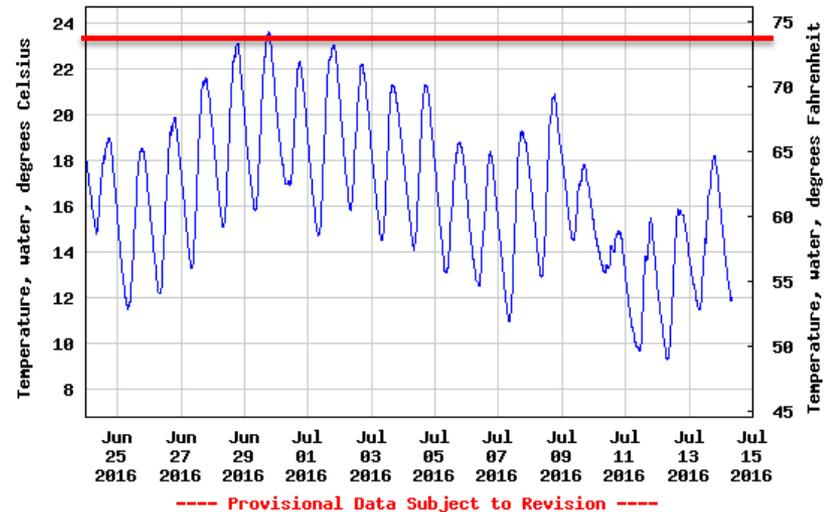
# Fishing Restrictions



USGS 06023000 Ruby River near Twin Bridges MT



USGS 06024580 Big Hole River near Wise River MT



Montana Fish,  
Wildlife & Parks

# Water Right Administration

**Montana Fish, Wildlife & Parks**

## In-stream Water Rights Review

Layers Legend Water Rights Review

**Step 2:** Update the "Include in Analysis" checkbox to indicate which FWP water rights should be used in the determination of priority date. All water rights that are valid at this time of year are checked by default. Click the "Find Juniors" button to get a list of all juniors that are diverting water within the catchment.

Include in Analysis	Stream	Priority Date	Valid Dates	Flow	WI
<input type="checkbox"/>	Shields River	12/15/1978	09/01-09/30	87.5	
<input type="checkbox"/>	Shields River	12/15/1978	10/01-10/31	132	
<input type="checkbox"/>	Shields River	12/15/1978	05/01-05/31	460	
<input type="checkbox"/>	Shields River	12/15/1978	04/01-04/30	131	
<input checked="" type="checkbox"/>	Shields River	12/15/1978	07/01-07/31	99	
<input type="checkbox"/>	Shields River	12/15/1978	12/01-12/31	107	

Find Juniors Cancel

## Calls to Junior Water Users:

- Shields River
- Tongue River

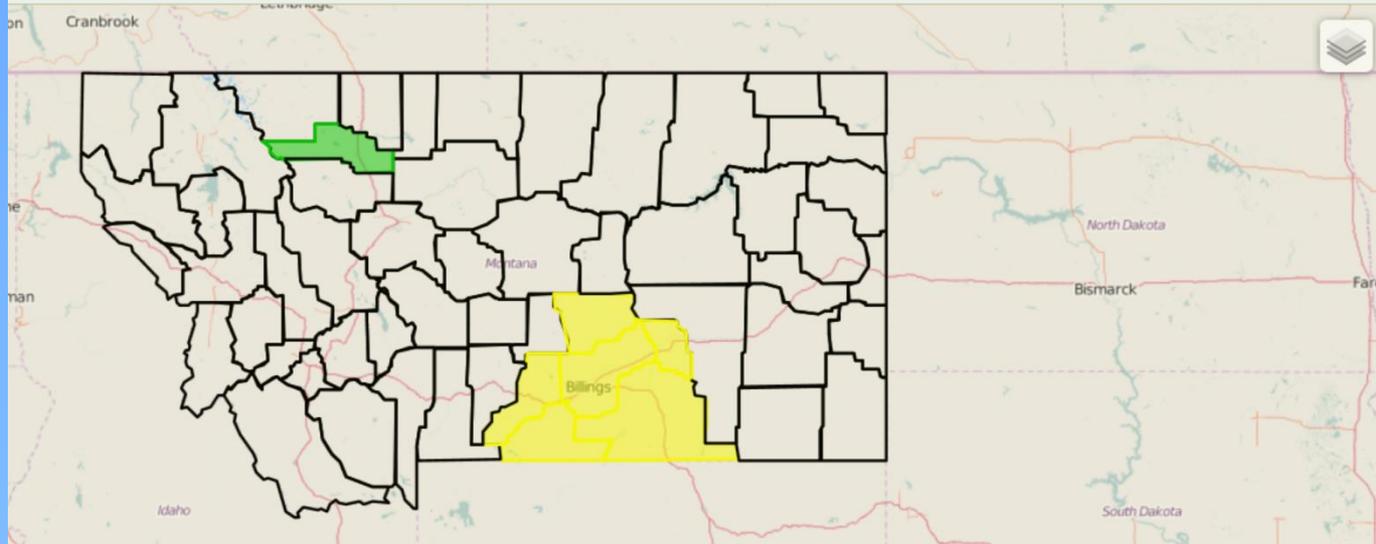
## Warning Letters:

- Blackfoot River (in coordination with the local drought committee)

# Fire Restrictions

<http://firerestrictions.us/mt/>

Search



## Stage I Fire Restrictions on FWP Lands:

- Yellowstone County
- Musselshell County
- Stillwater County
- Big Horn County
- Treasure County

# How to Stay Informed



## Montana Fish, Wildlife & Parks



- Home
- Hunting
- Fishing
- Recreation
- Fish & Wildlife
- Education
- Enforcement
- Regions
- Doing Business
- News
- MyFWP



### VISION AND GUIDE

#### Who we are and where we're going

FWP'S work affects ranchers, hunters, anglers, farmers, outfitters, guides, state parks visitors, hotel and cafe owners, tourists, fly shop employees, students, and many others. Because of our vast effect, we are obligated to do the best job we can. And to continually improve.

The department took a big step in that direction recently with completion of a new FWP vision that sets the direction for what this department wants to achieve in the next decade.

- » [Learn More](#)
- » [See the Vision and Guide](#)

Search FWP

Site Index >>

- Buy a License
- Restrictions & Closures**
- Submit Public Comments
- Contact Us

- » [Montana WILD Calendar](#)
- » [FWP Calendar](#)
- » [Jobs](#)

Feedback

<http://fwp.mt.gov/>





# *Montana Fish, Wildlife & Parks*

## Questions?

**Stephen Begley**

**Water Conservation Specialist**

[sbegley@mt.gov](mailto:sbegley@mt.gov)

406-444-1229

## Governor's Drought Advisory Committee Precipitation and Soil Moisture Update July 14<sup>th</sup>, 2016

Lucas Zukiewicz  
*Water Supply Specialist (Snow Hydrologist)*  
USDA-NRCS  
Montana Snow Surveys  
Lucas.Zukiewicz@mt.usda.gov  
406-587-6843

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/mt/snow/>

Summer maintenance of the SNOTEL system is currently underway.

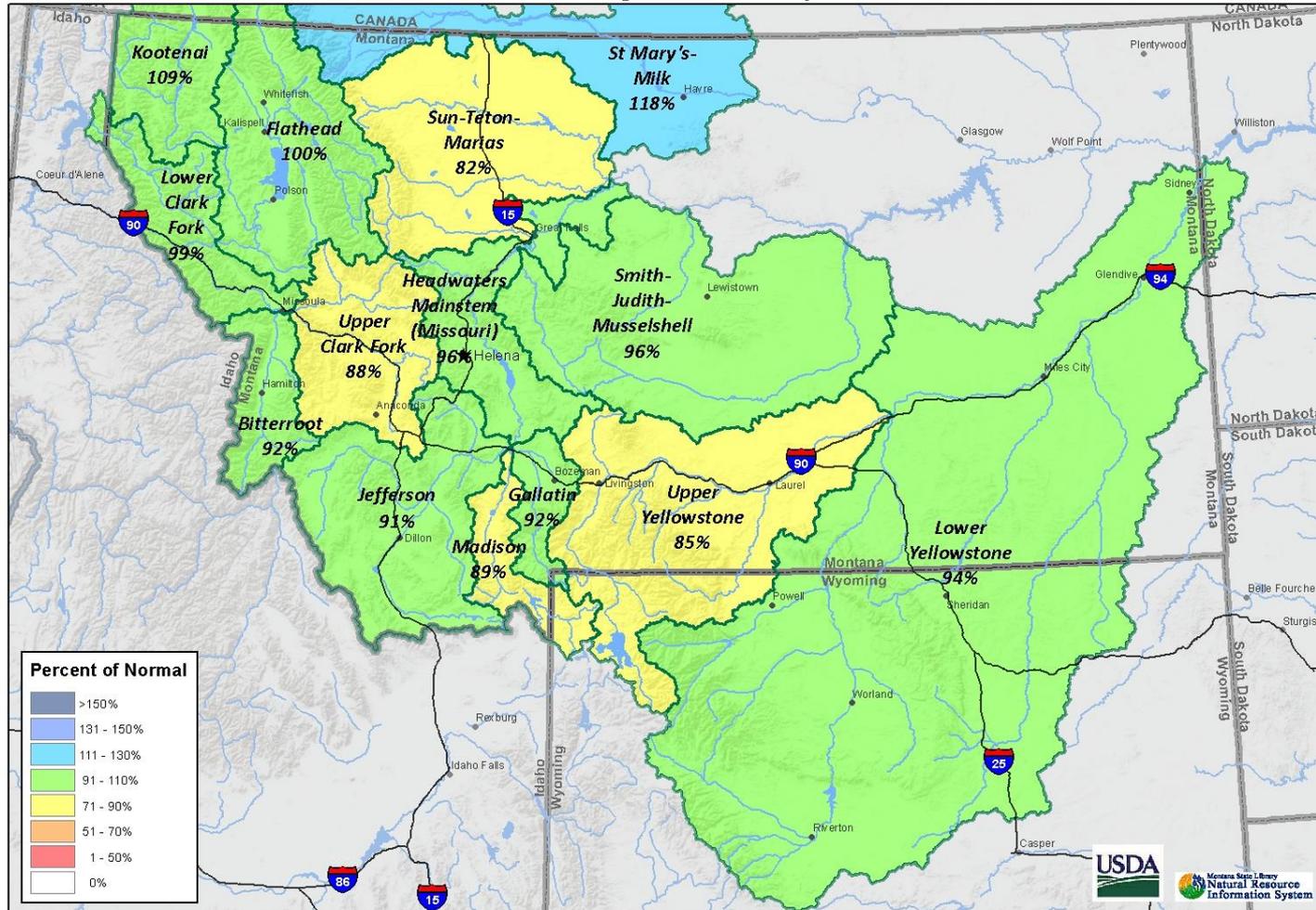


## Mountain Precipitation

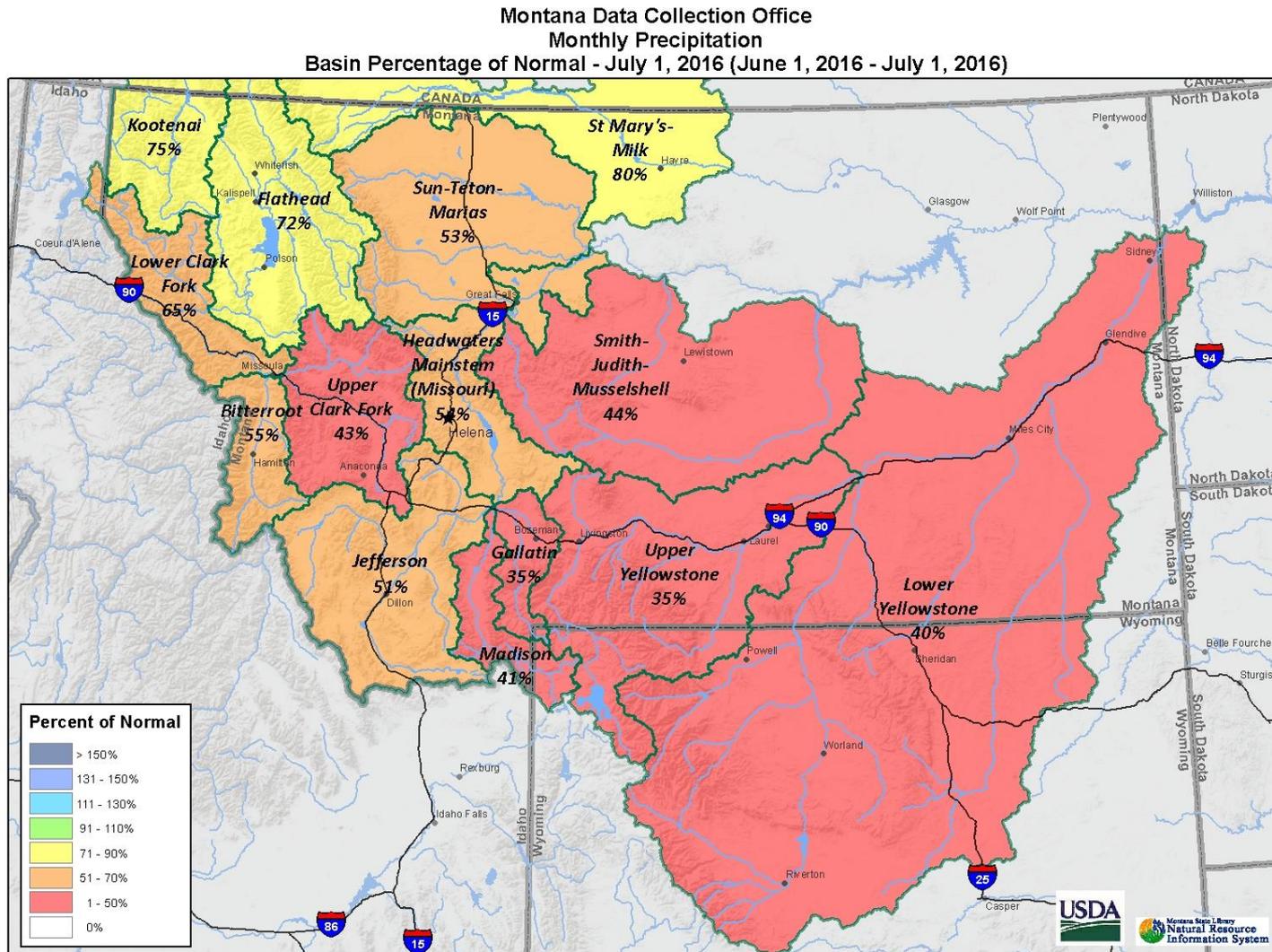


## Water Year Mountain SNOTEL Precipitation

Montana Data Collection Office  
Water Year to Date Precipitation  
Basin Percentage of Normal - July 1, 2016



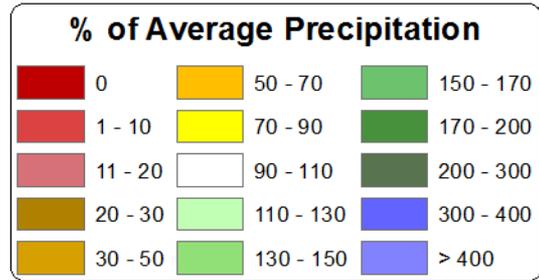
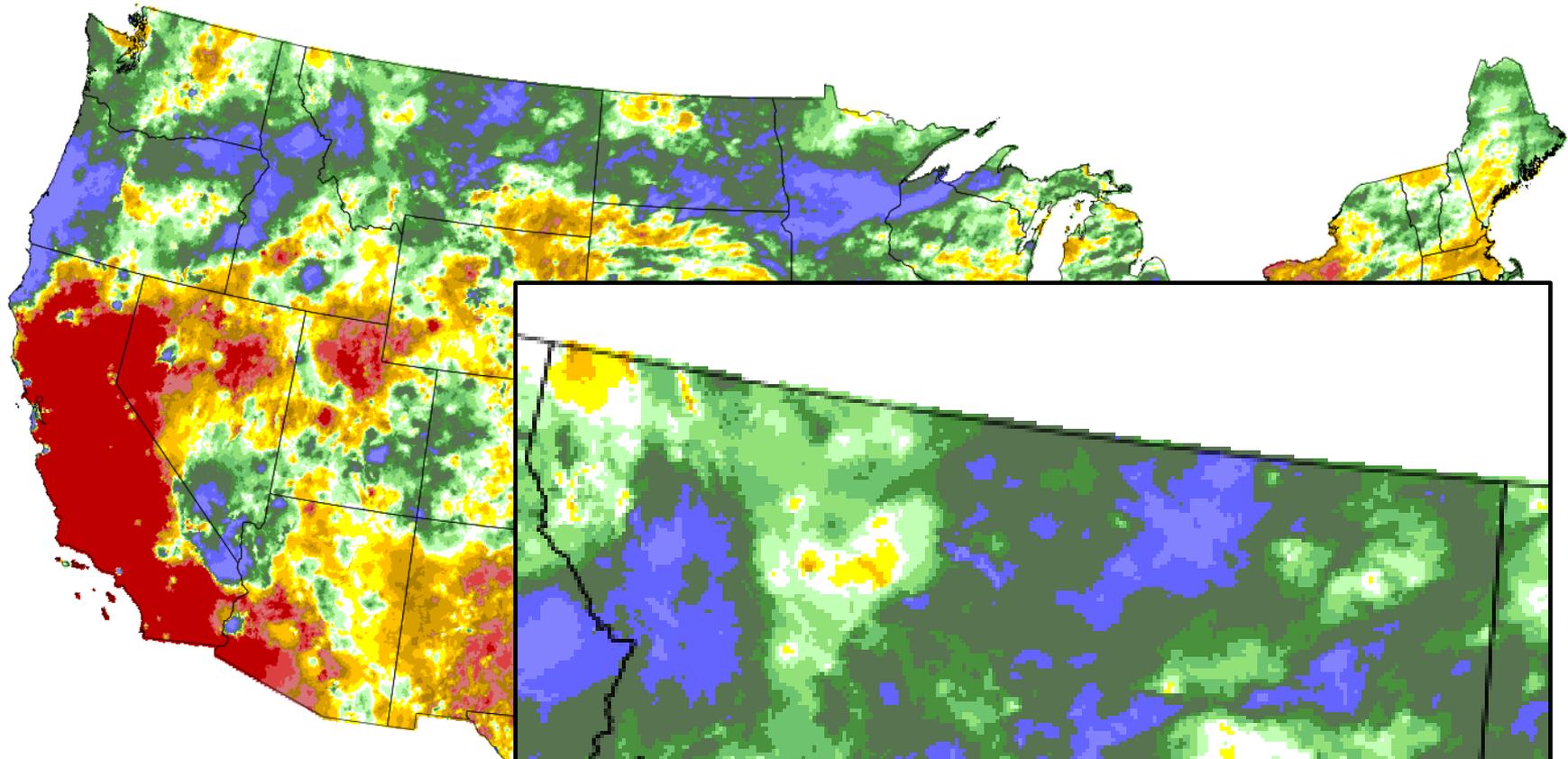
## Month-to-date Mountain SNOTEL Precipitation







**Total Precipitation Anomaly: 01 July 2016 - 12 July 2016**  
Period ending 7 AM EST 12 Jul 2016  
Base period: 1981-2010  
(Map created 13 Jul 2016)

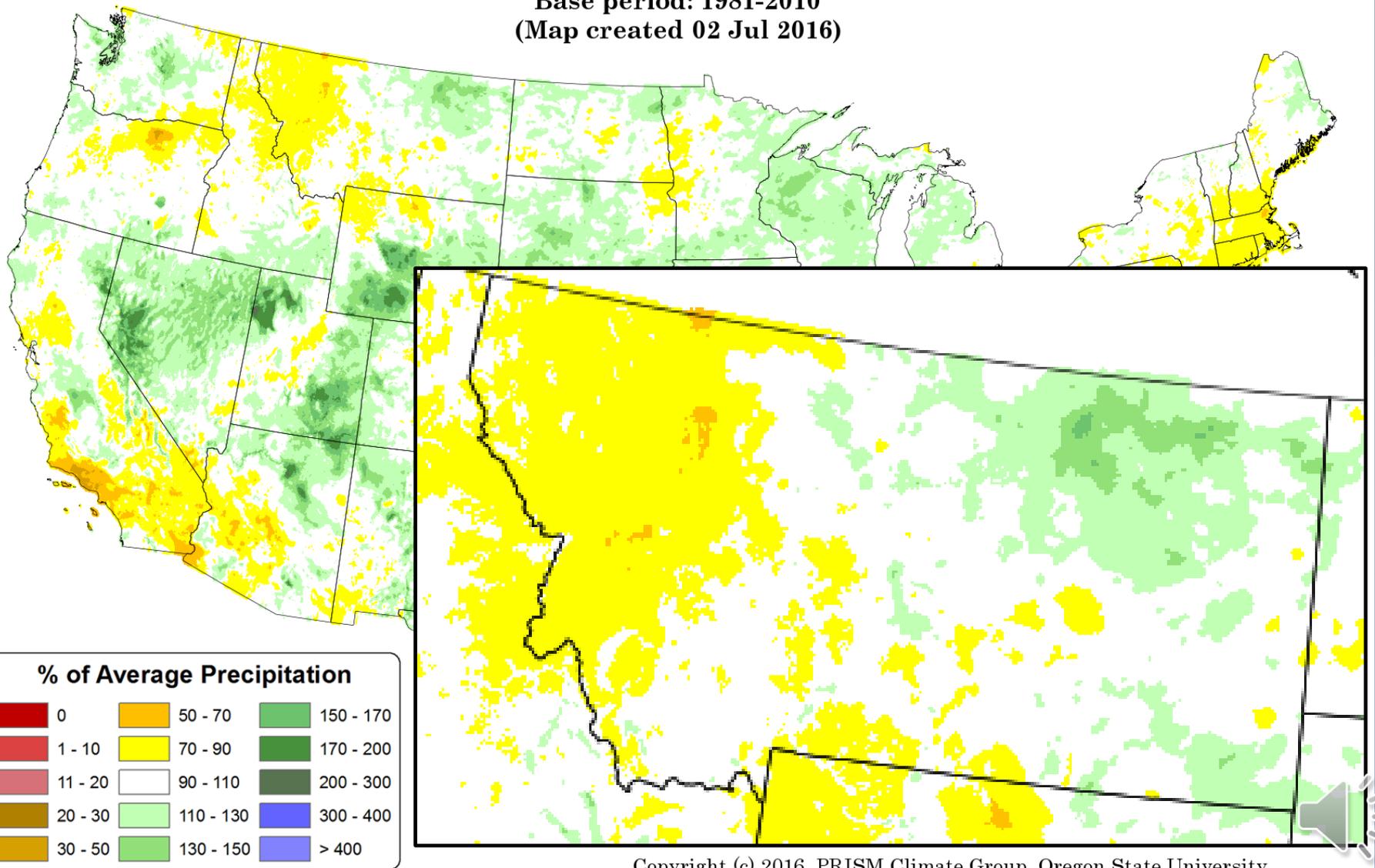


## Total Precipitation Anomaly: April 2015 - June 2016

Period ending 7 AM EST 30 Jun 2016

Base period: 1981-2010

(Map created 02 Jul 2016)



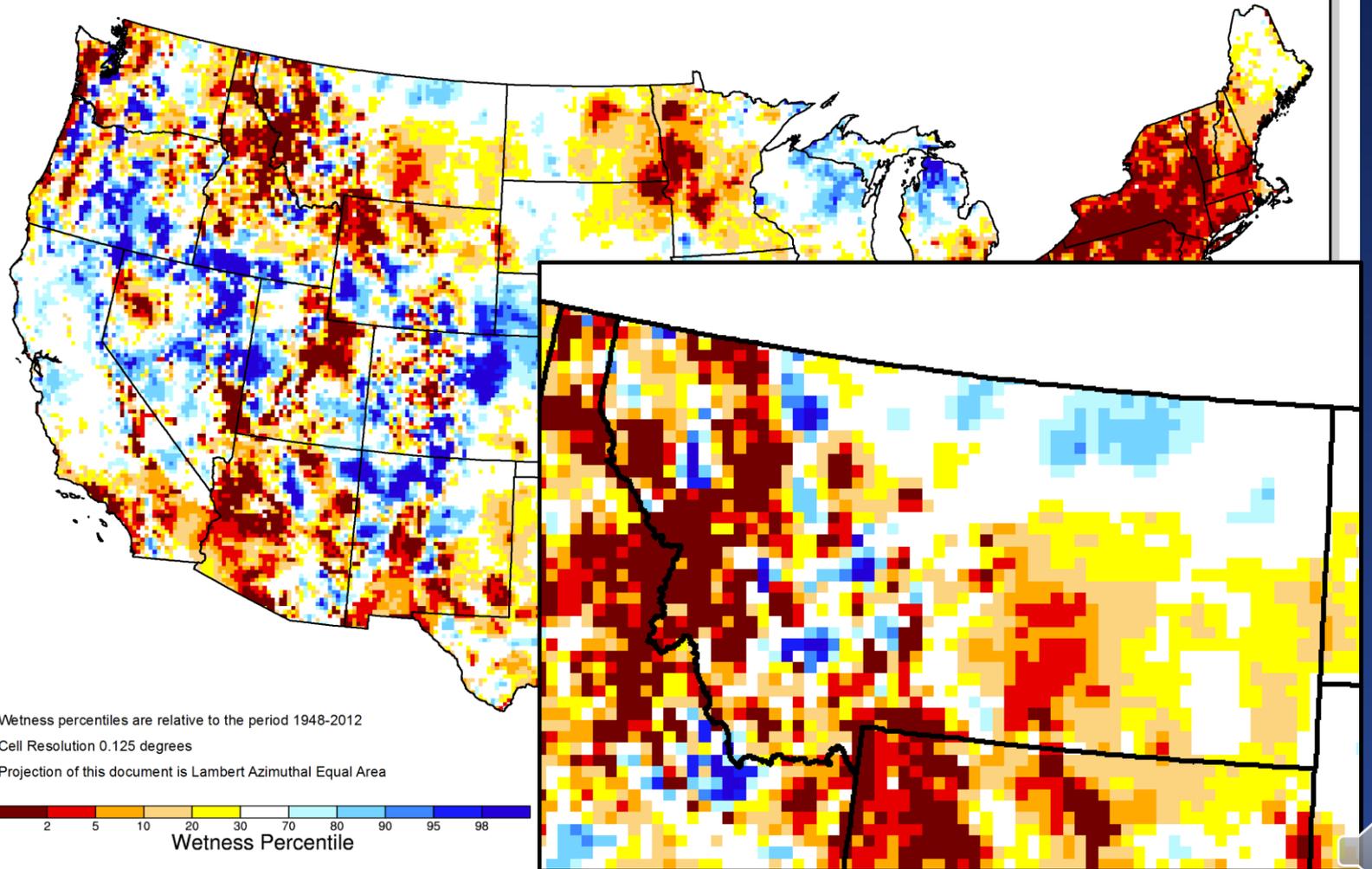
## Soil Moisture





## GRACE-Based Shallow Groundwater Drought Indicator

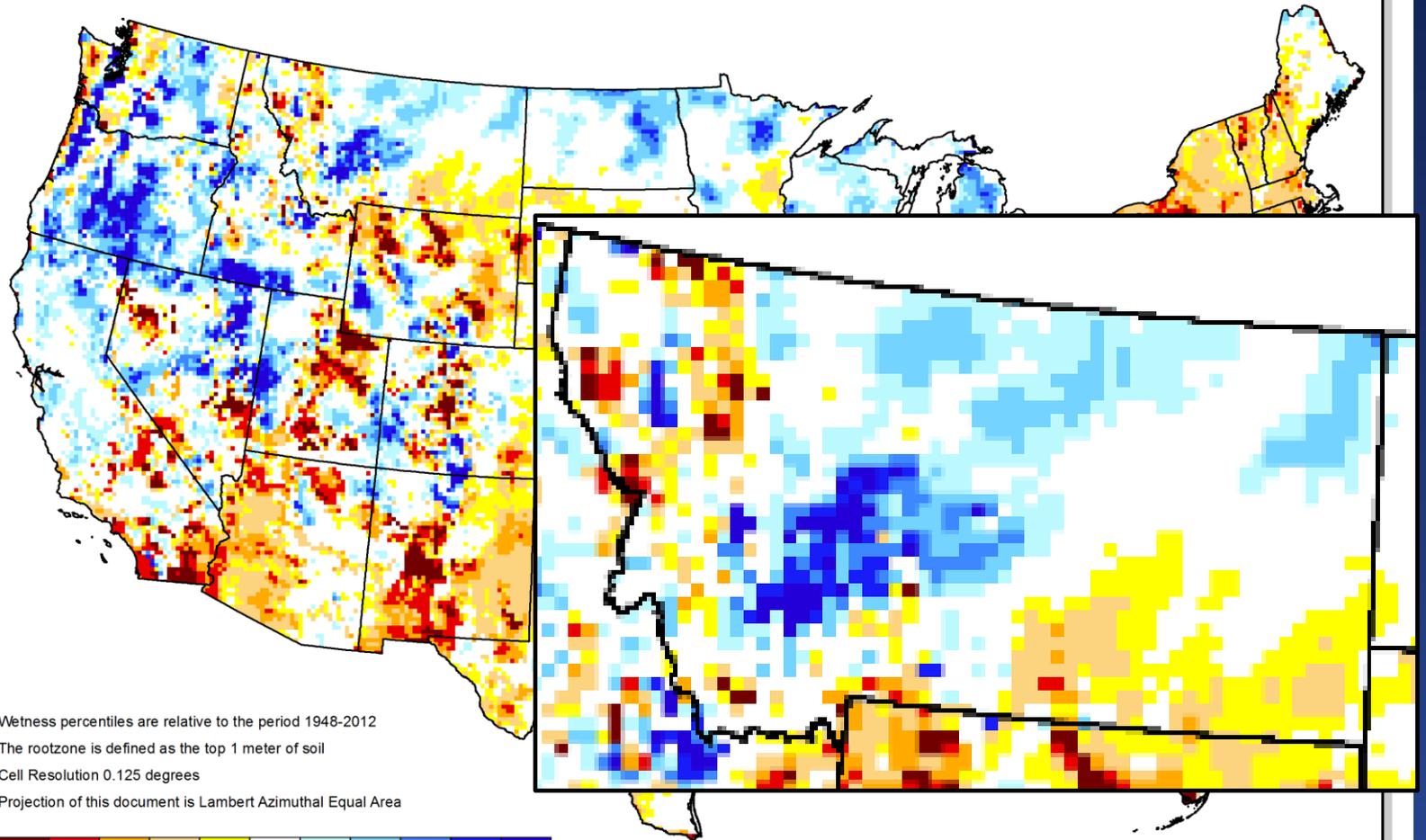
July 11, 2016





## GRACE-Based Root Zone Soil Moisture Drought Indicator

July 11, 2016



Wetness percentiles are relative to the period 1948-2012

The rootzone is defined as the top 1 meter of soil

Cell Resolution 0.125 degrees

Projection of this document is Lambert Azimuthal Equal Area



<http://drought.unl.edu/MonitoringTools/NASAGRACEDataAssimilation.aspx>

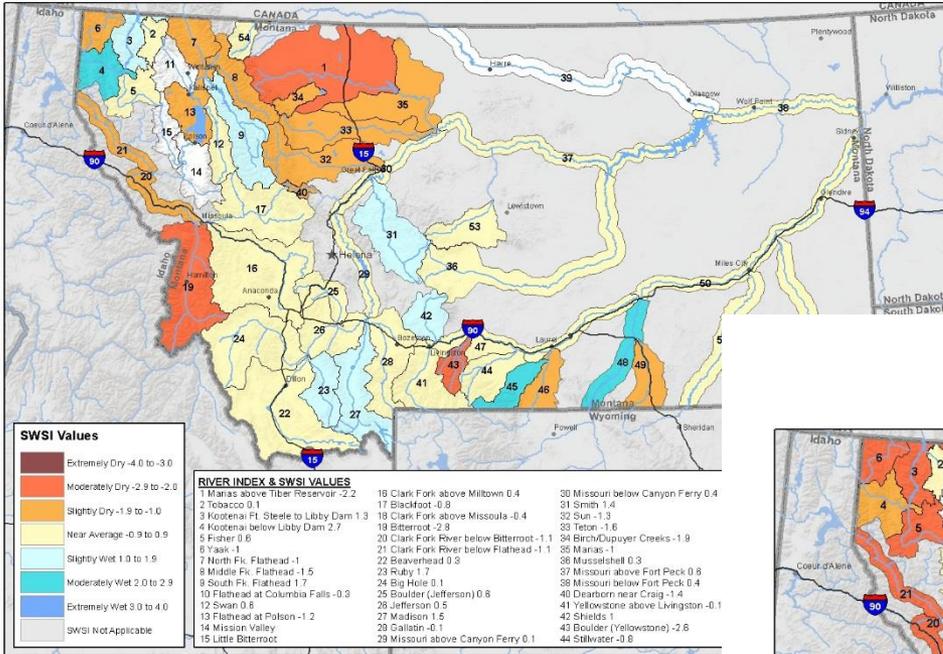


## Surface Water Supply Index



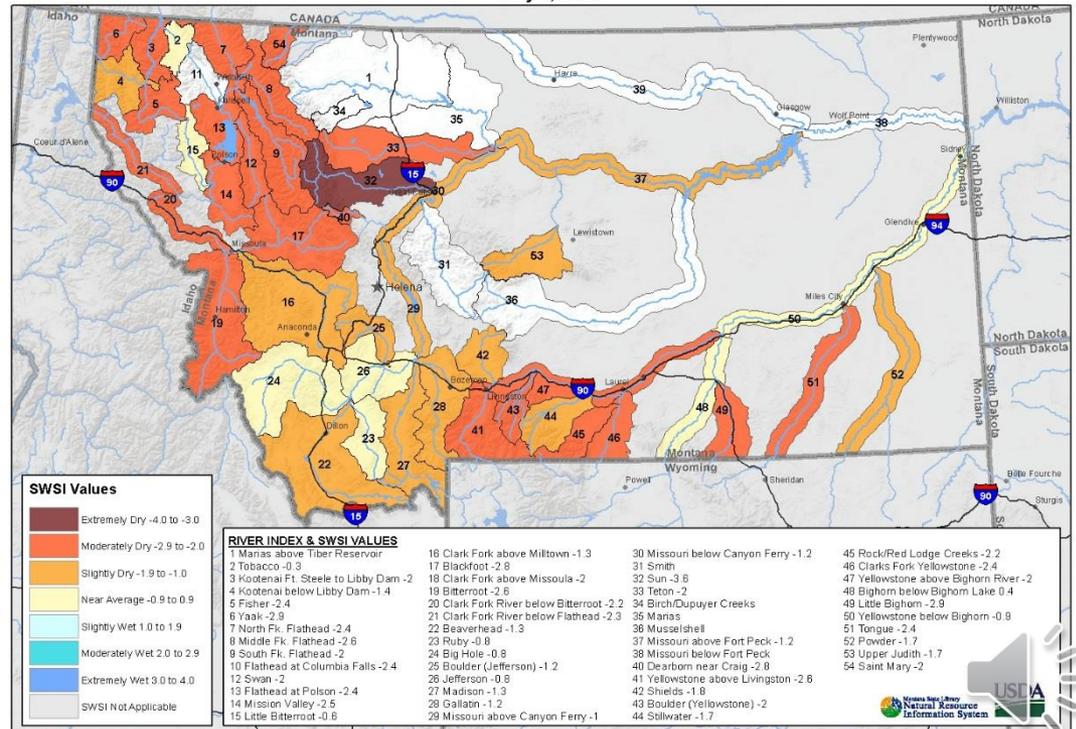
# Montana Snow Survey

Montana Data Collection Office  
Surface Water Supply Index (SWSI)  
June 1, 2016



July 2016

Montana Data Collection Office  
Surface Water Supply Index (SWSI)  
July 1, 2016



June 2016

## Governor's Drought Advisory Committee Precipitation and Soil Moisture Update July 14<sup>th</sup>, 2016

**Lucas Zukiewicz**  
*Water Supply Specialist (Snow Hydrologist)*  
USDA-NRCS  
Montana Snow Surveys  
Lucas.Zukiewicz@mt.usda.gov  
406-587-6843

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/mt/snow/>

Summer maintenance of the SNOTEL system is currently underway.

