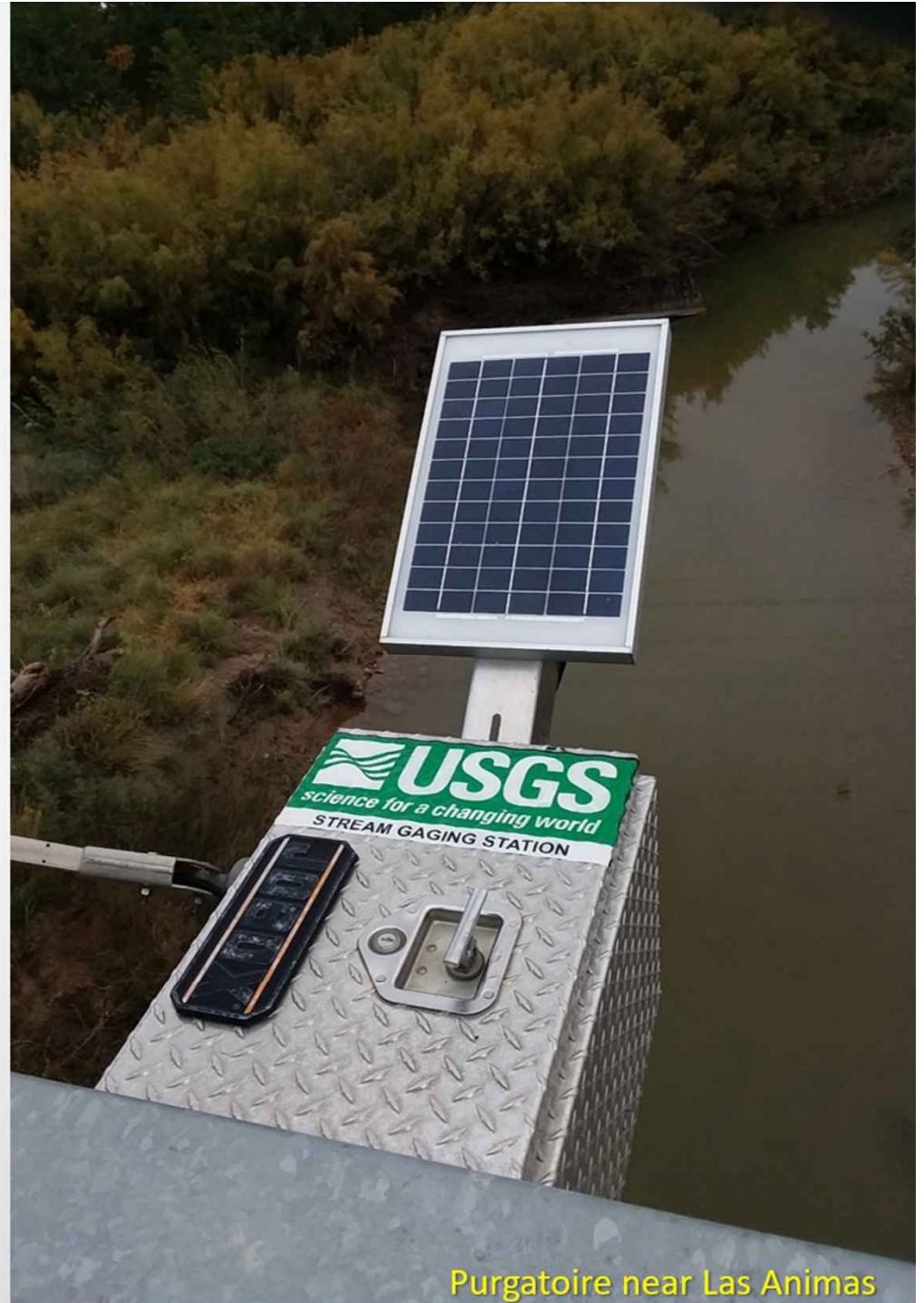


# Streamflow Conditions in the Arkansas River Basin WY 2020

In cooperation  
with the  
Arkansas River Compact  
Administration

Bob Kimbrough  
USGS Colorado Water Science Center  
December 9, 2020




Purgatoire near Las Animas




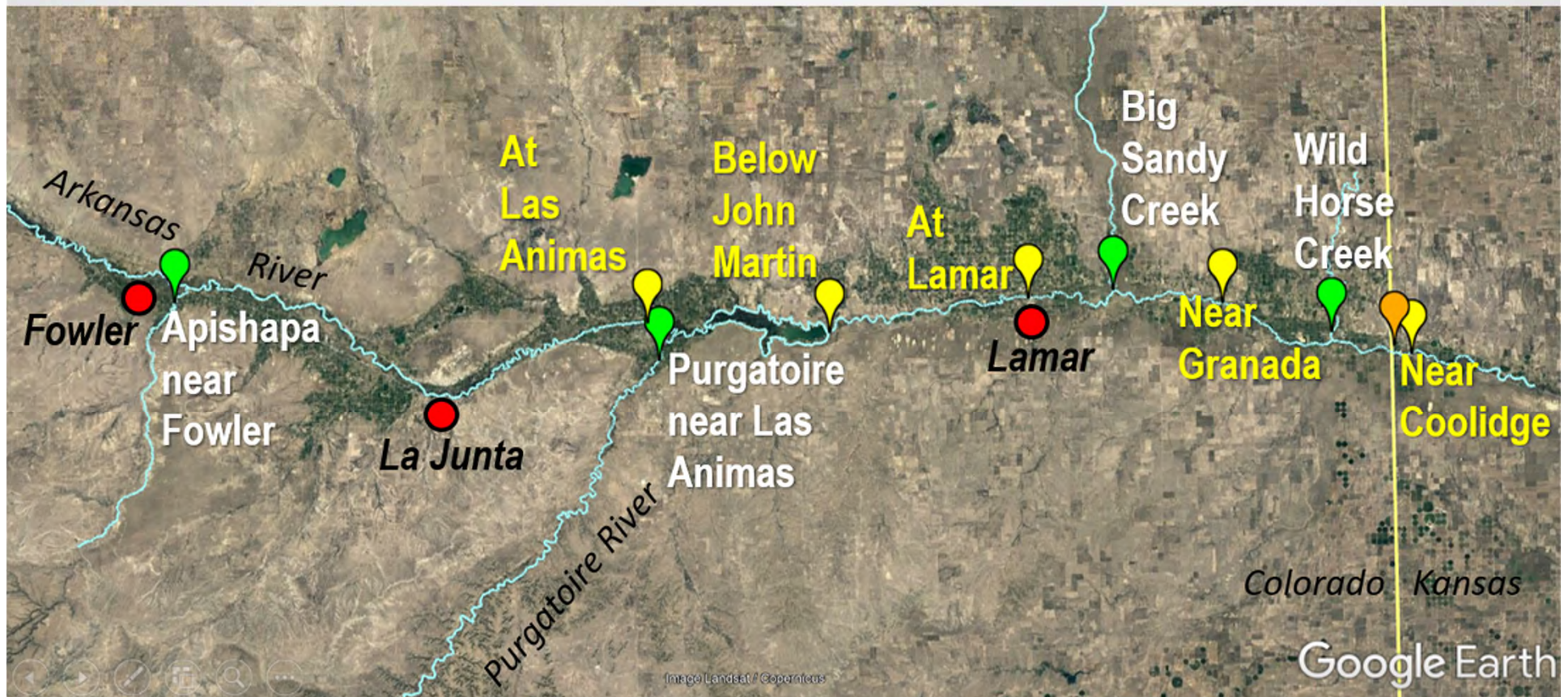
# USGS/ARCA Cooperative Program 2020

10 streamgages; Fowler, CO – Coolidge, KS

 5 Mainstem Arkansas sites

 Frontier Ditch near Coolidge

 4 Tributaries

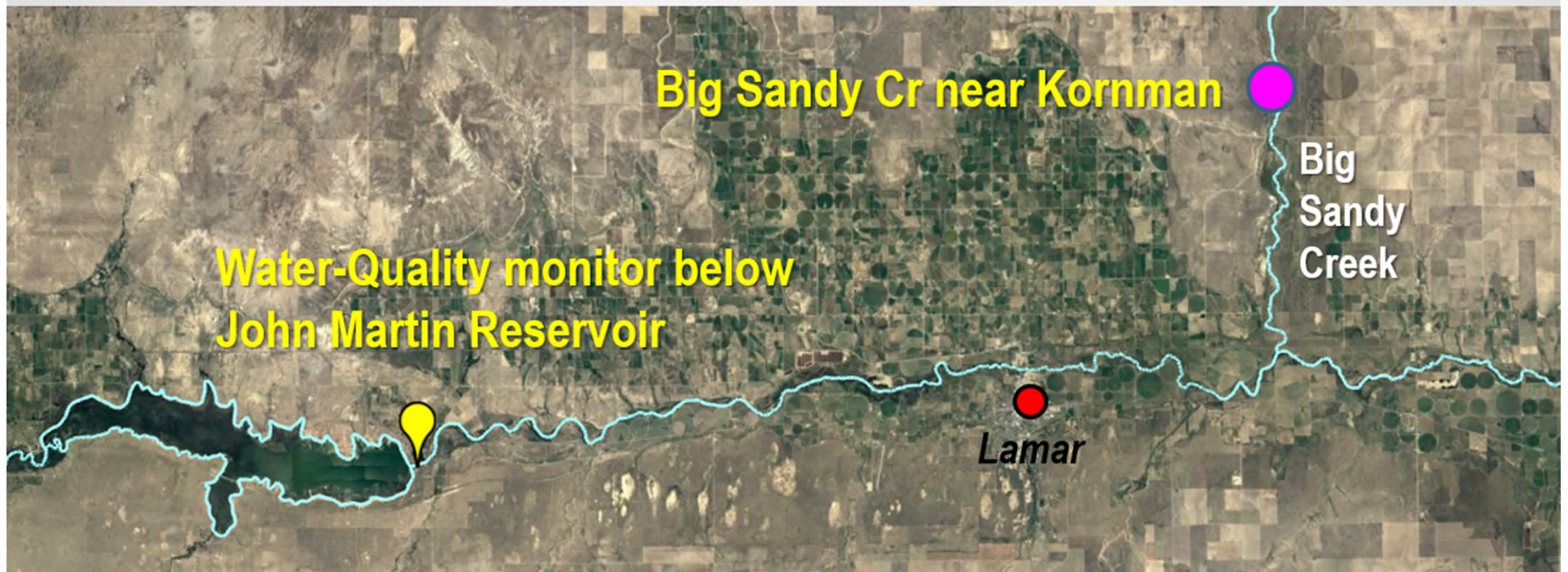


# Changes implemented in 2020

**Discontinued** – Crest Stage Gage, Big Sandy Cr near Kornman

**Addition** – Water Quality Monitor below John Martin Reservoir

- Water Temperature and Specific Conductance
- Continuous record since 1989



# WY 2020 streamflow conditions

*WY 2020 (Oct 1, 2019 – Sept 30, 2020)*

## Hydrographs for 6 sites

- 2 sites upstream of JMR
- 4 sites downstream of JMR

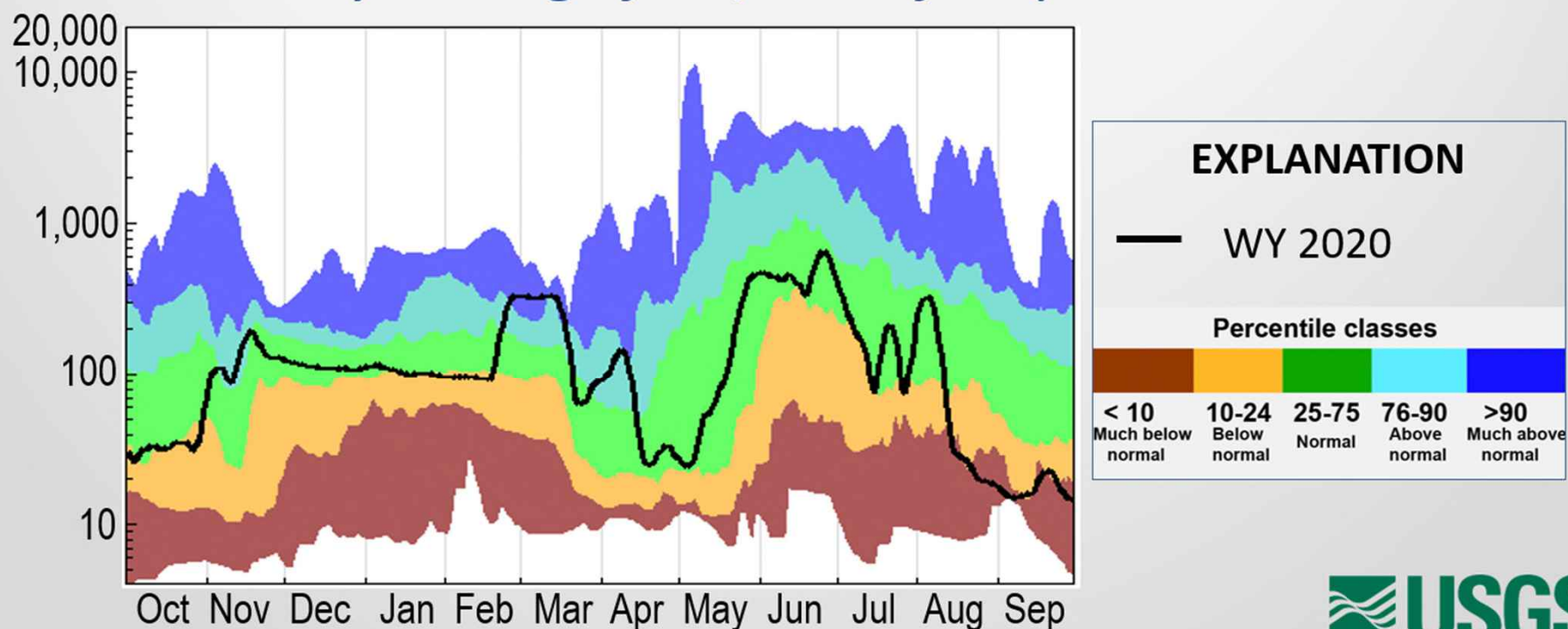


# WY 2020 streamflow conditions

## *Arkansas River at Las Animas*

105,600 Acre-Feet, 56% of average

*7-day average flow, cubic feet per second*

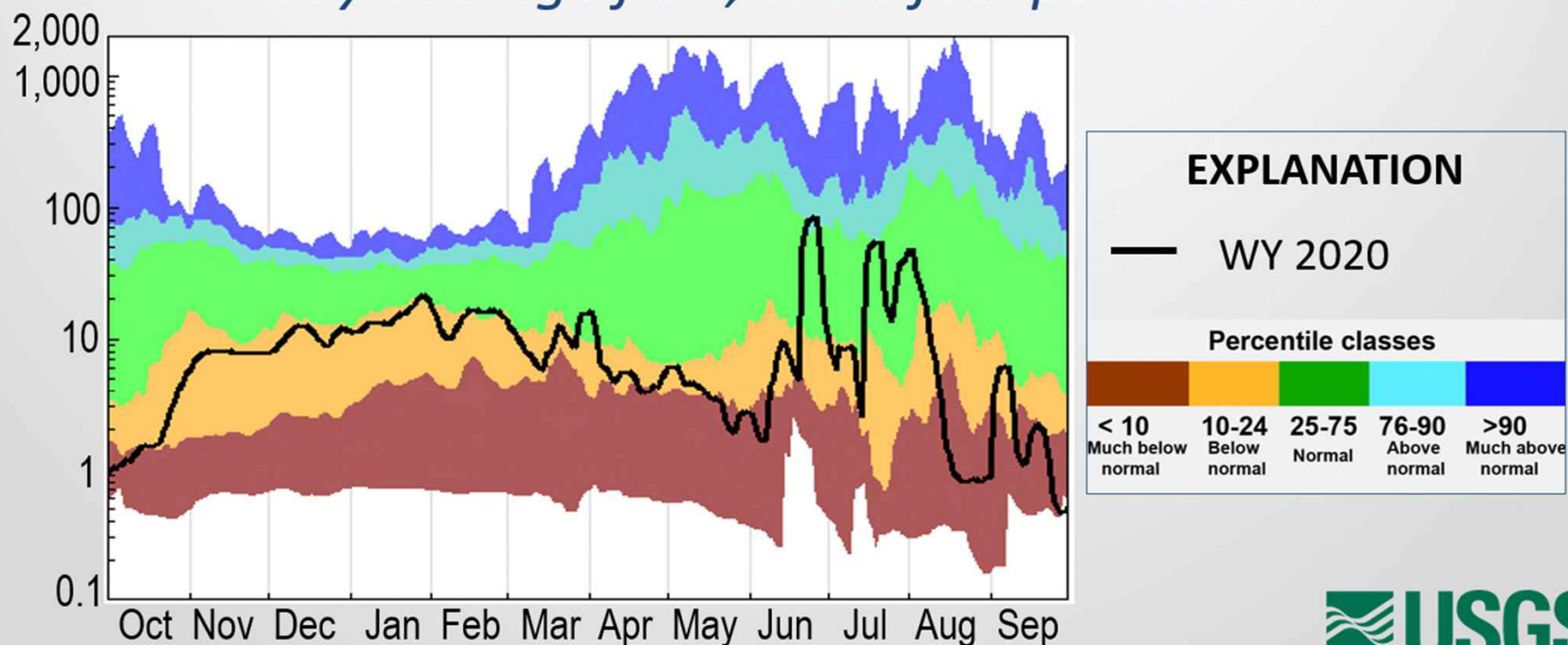


# WY 2020 streamflow conditions

## *Purgatoire River near Las Animas*

7,770 Acre-Feet, 18% of average  
(lowest annual runoff in 43-year record)

*7-day average flow, cubic feet per second*

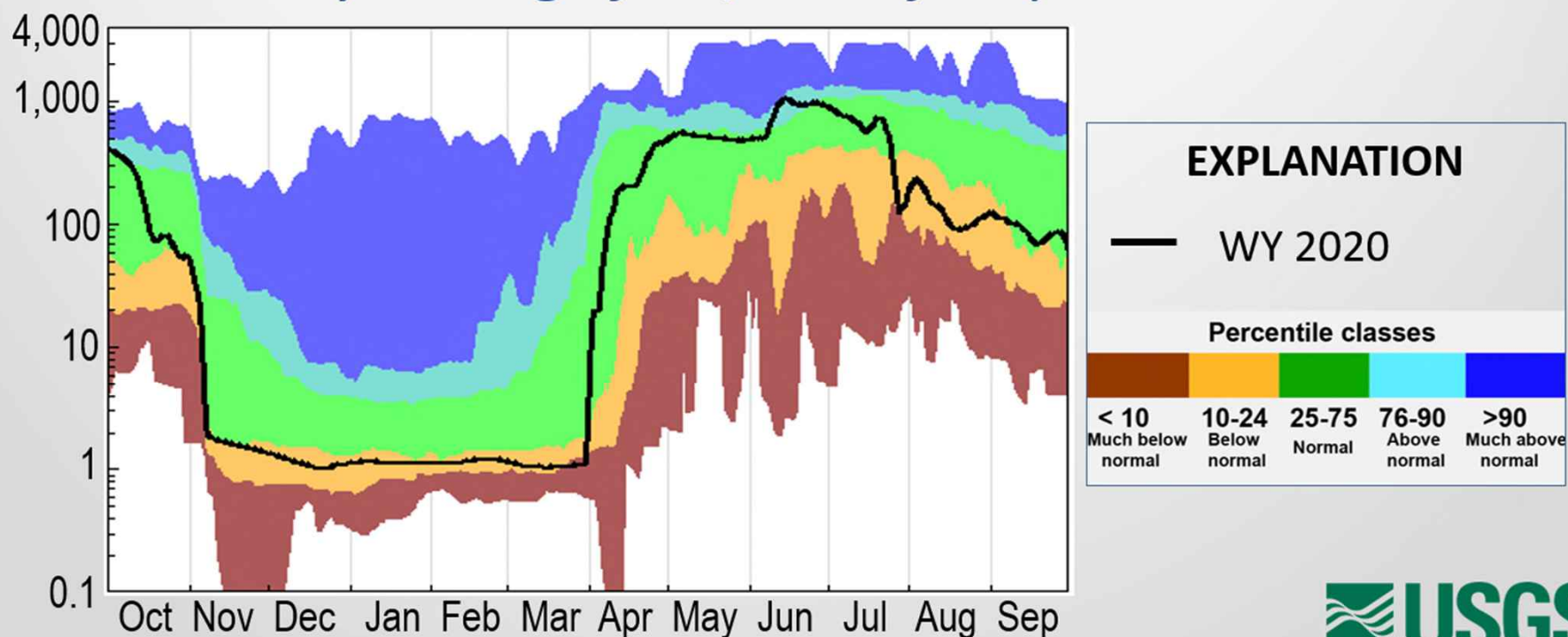


# WY 2020 streamflow conditions

## *Arkansas River below John Martin Reservoir*

155,600 Acre-Feet, 77% of average

*7-day average flow, cubic feet per second*

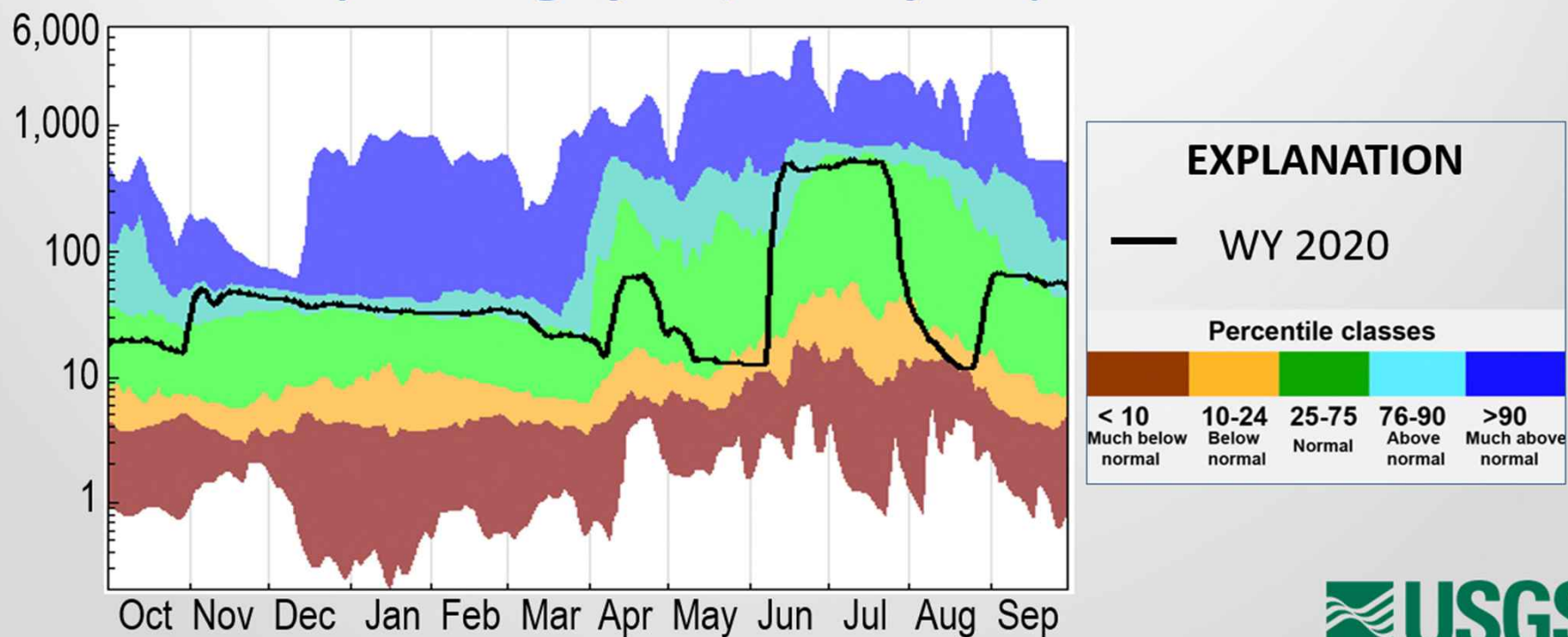


# WY 2020 streamflow conditions

## *Arkansas River at Lamar*

64,030 Acre-Feet, 79% of average

*7-day average flow, cubic feet per second*



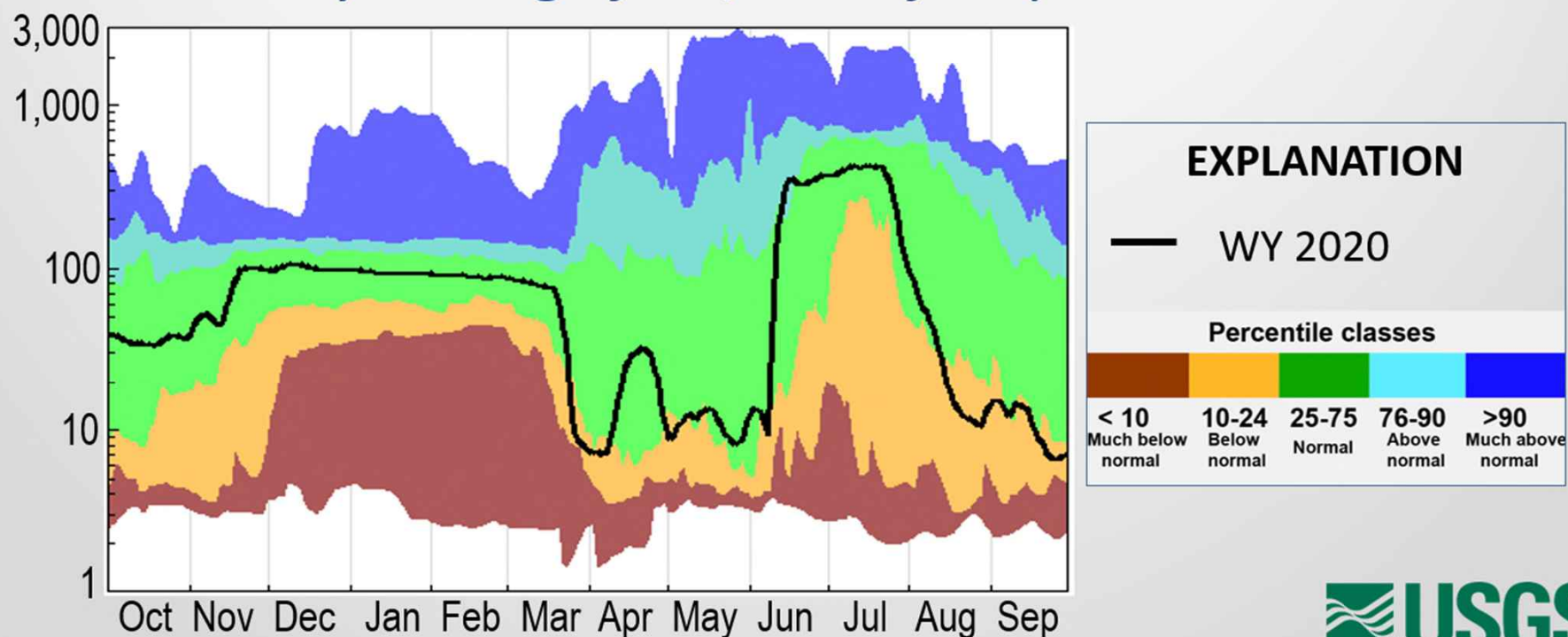


# WY 2020 streamflow conditions

## *Arkansas River near Granada*

66,200 Acre-Feet, 57% of average

*7-day average flow, cubic feet per second*

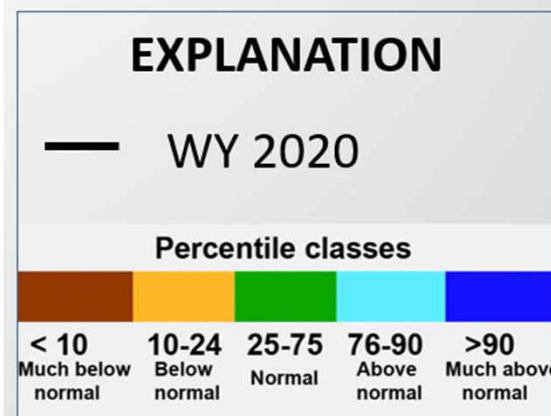
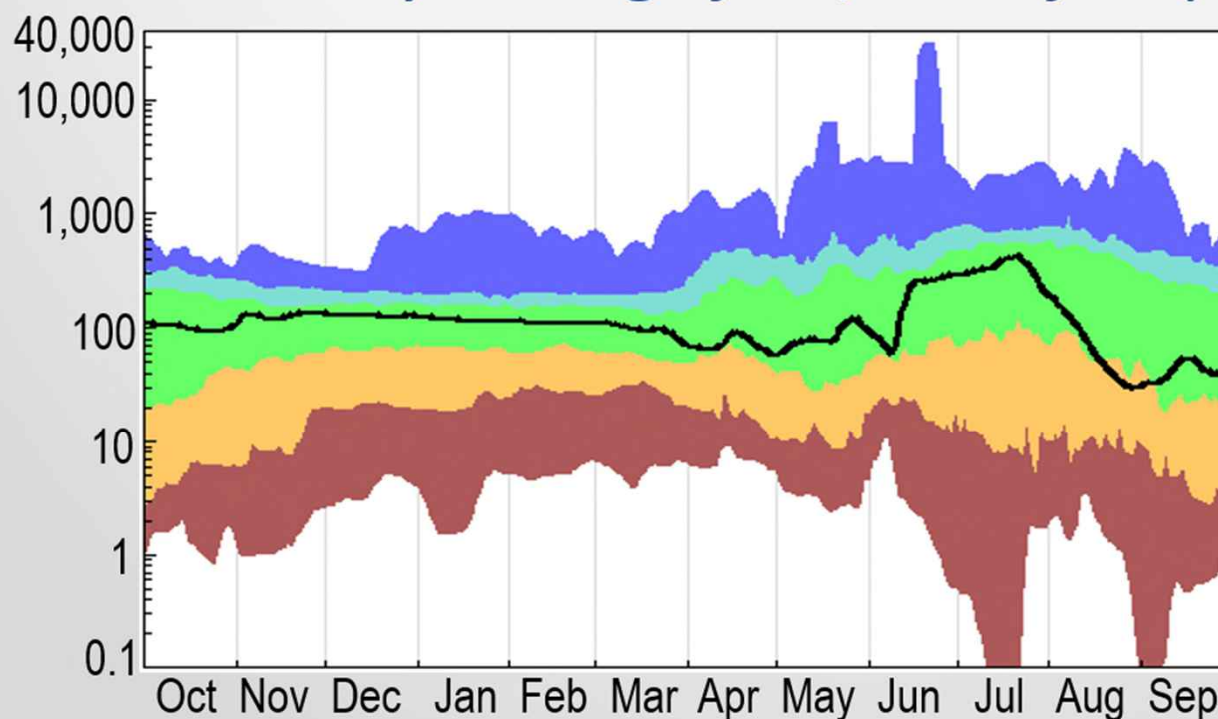


# WY 2020 streamflow conditions

## *Arkansas River near Coolidge, KS*

91,200 Acre-Feet, 63% of average

*7-day average flow, cubic feet per second*



# WY 2020 streamflow conditions

Station	WY20 Annual Flow, in ac-ft	Percent of Average
Apishapa River near Fowler	9,290	53%
Big Sandy Creek near Lamar	7,550	75%
Wildhorse Cr. above Holly (Oct, Apr-Sept)	2,660	74%
Frontier Ditch near Coolidge	7,330	86%

# Summary

- WY20 streamflow for the two major inflows to JMR was 56% of average in the Arkansas River at Las Animas and 18% in the Purgatoire River
- WY20 total annual flow in the Purgatoire River near Las Animas was the lowest in 43 years of record
- Downstream of JMR, mainstem flow at 4 sites ranged from 57 to 79% of average, and was 63% of average at Coolidge, KS