Floods in the West and Drought in the East: Surface Water Conditions in Kansas, Water Year 2018

Bradley Lukasz

Hydrologist

U.S. Geological Survey

Governor's Water Conference

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U.S. Department of the Interior
U.S. Geological Survey

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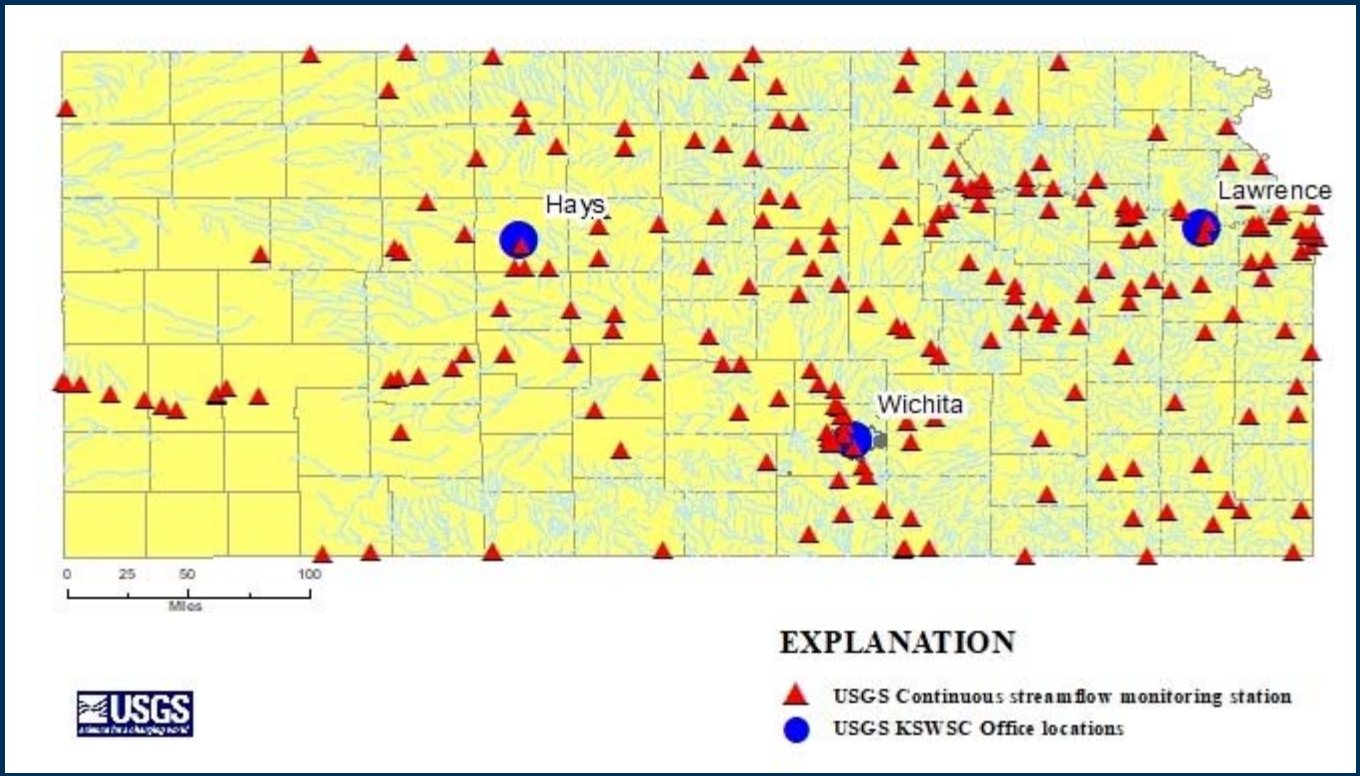
Kansas continuous monitoring network



Projection: GCS_North_American_1983

USGS

Who uses USGS data????

- Reservoir Operators and Designers
  - Corps of Engineers, Bureau of Reclamation, non-federally operated reservoirs
- Water Managers
  - Kansas Water Office, Kansas DWR, local management districts
- Emergency management
  - National Weather Service, city, and county emergency managers
- Researchers
  - USGS research, Universities, other Federal Agencies, consulting firms
- City planners
  - Flood mapping and storm water runoff design
- Engineers
  - Design and sizing of bridges, culverts, and smaller impoundments
- Cities, Tribes, Recreational uses

USGS

And many more!

Some of what we do…

USGS

…some more of what we do

USGS

WY 2018 Highlights

- Above normal precipitation in western Kansas, below normal precipitation in eastern Kansas
- Severe drought conditions in eastern Kansas by end of WY 2018
- Saline River near WaKeeney and Solomon River above Webster Reservoir had noteworthy peaks

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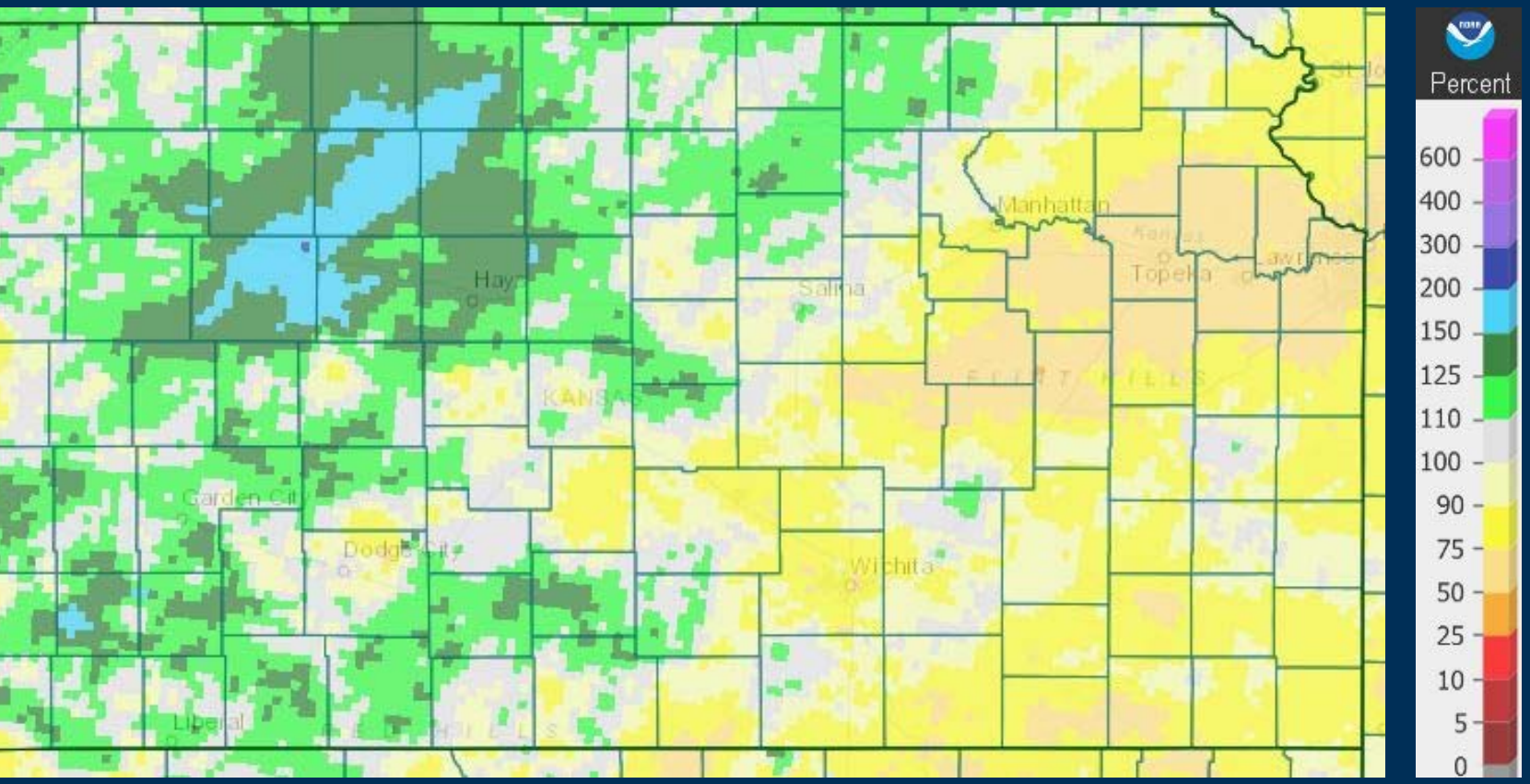
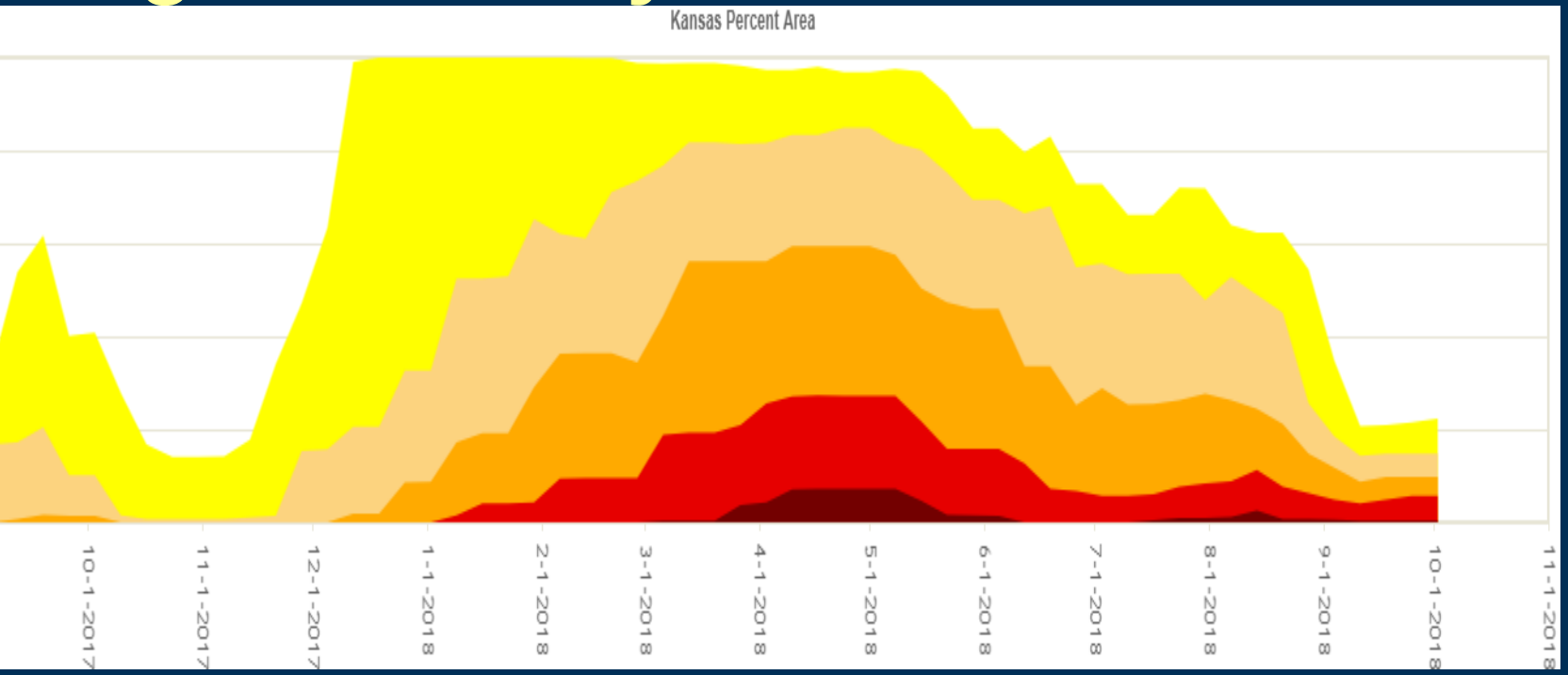
recipitation



Map showing "percent of normal" precipitation for WY 2018.

USGS

rought intensity



Drought intensity in Kansas throughout WY 2018.

Intensity:

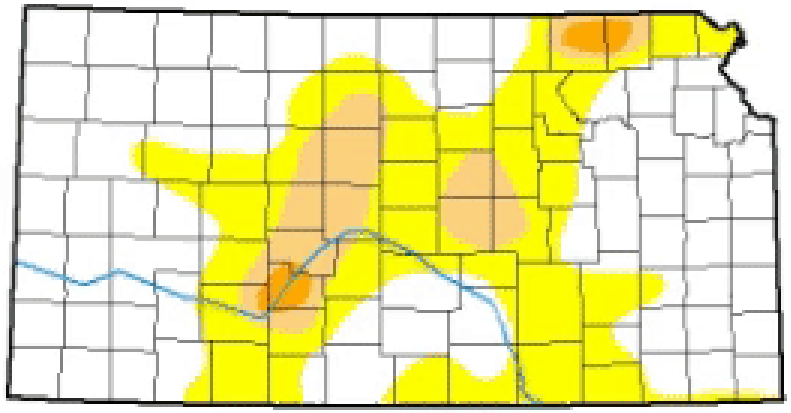
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

USGS

rought locations

U.S. Drought Monitor

Kansas



October 3, 2017

(Released Thursday, Oct. 5, 2017)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	59.19	40.81	10.08	1.35	0.00	0.00
Last Week 09-26-2017	59.89	40.11	10.08	1.35	0.00	0.00
3 Months Ago 07-04-2017	84.33	15.67	0.00	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	17.31	82.69	30.71	10.58	0.00	0.00
Start of Water Year 09-26-2017	59.89	40.11	10.08	1.35	0.00	0.00
One Year Ago 10-04-2016	86.63	13.37	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:

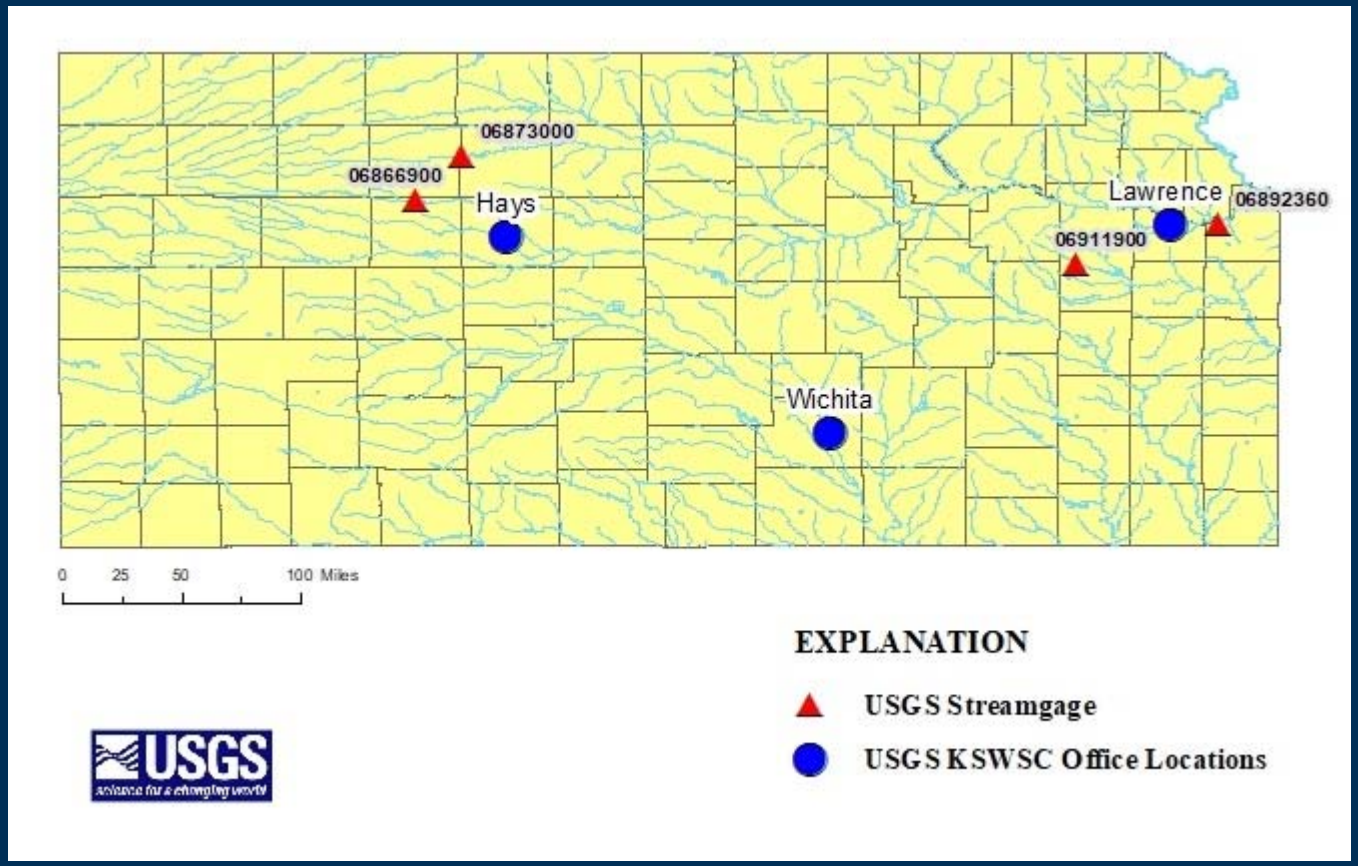
Anthony Artusa

NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/

USGS

elected sites



Projection: GCS_North_American_1983

USGS

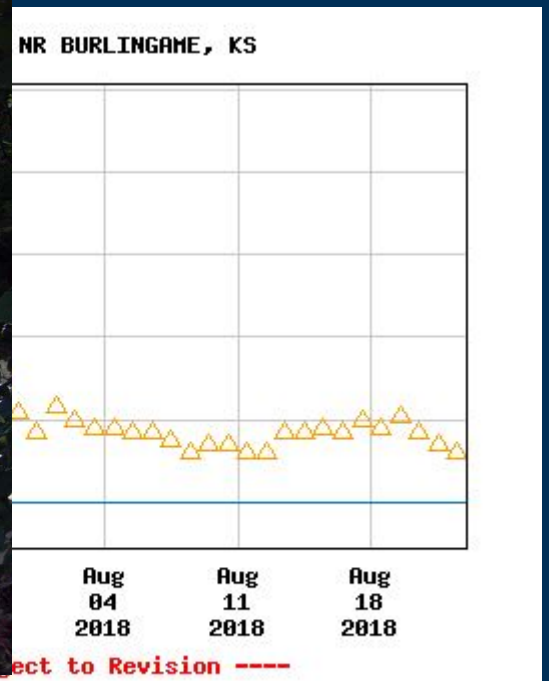
ragoon Creek near Burlingame, KS (06911900)

40 other years where zero flow was reached

48 days of zero flow in WY 2018

Zero flow last recorded in WY 2016

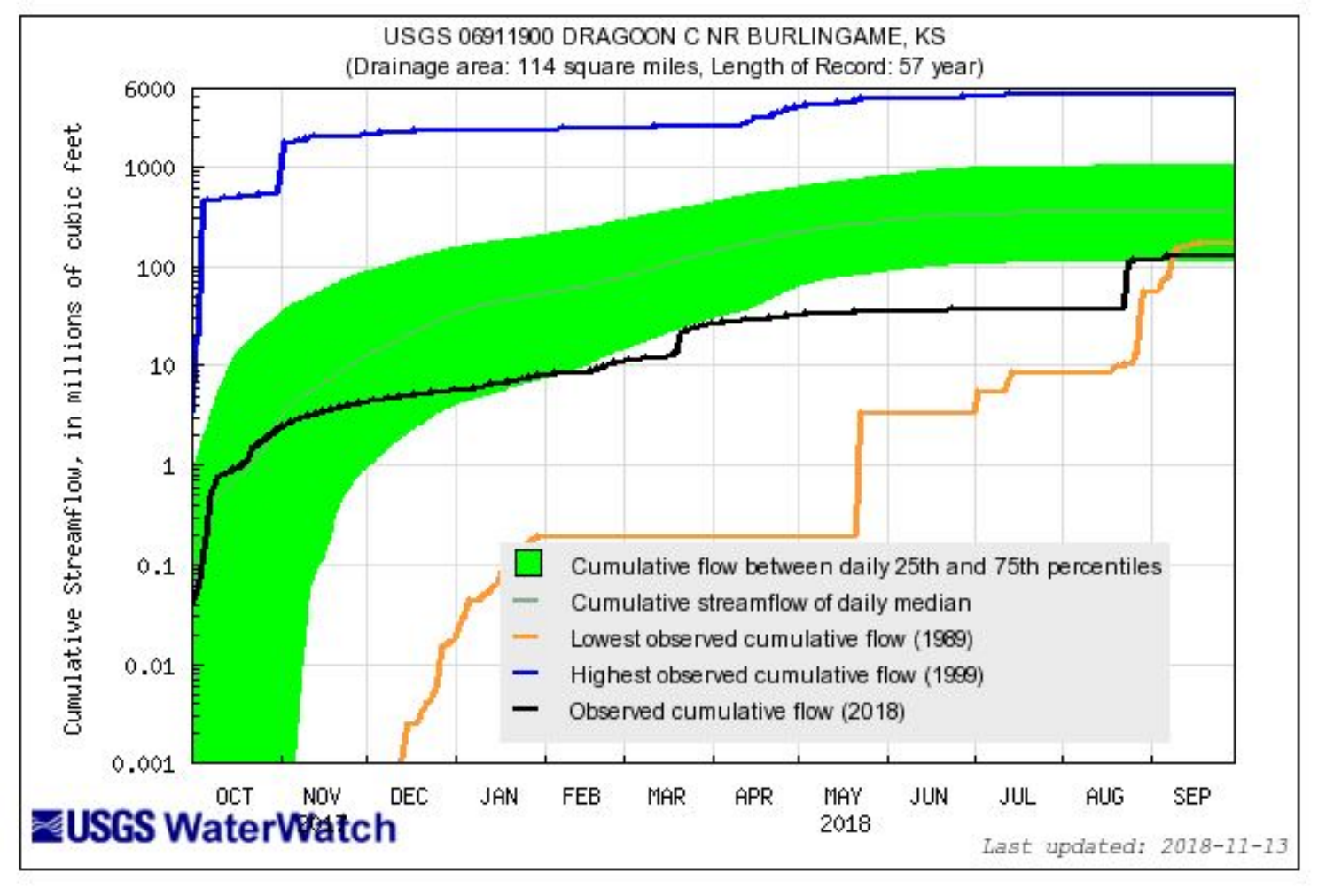
249 days of zero flow in WY 2012



USGS

Median daily statistic (57 years) Measured discharge

ragoon Creek near Burlingame, KS (06911900)



USGS

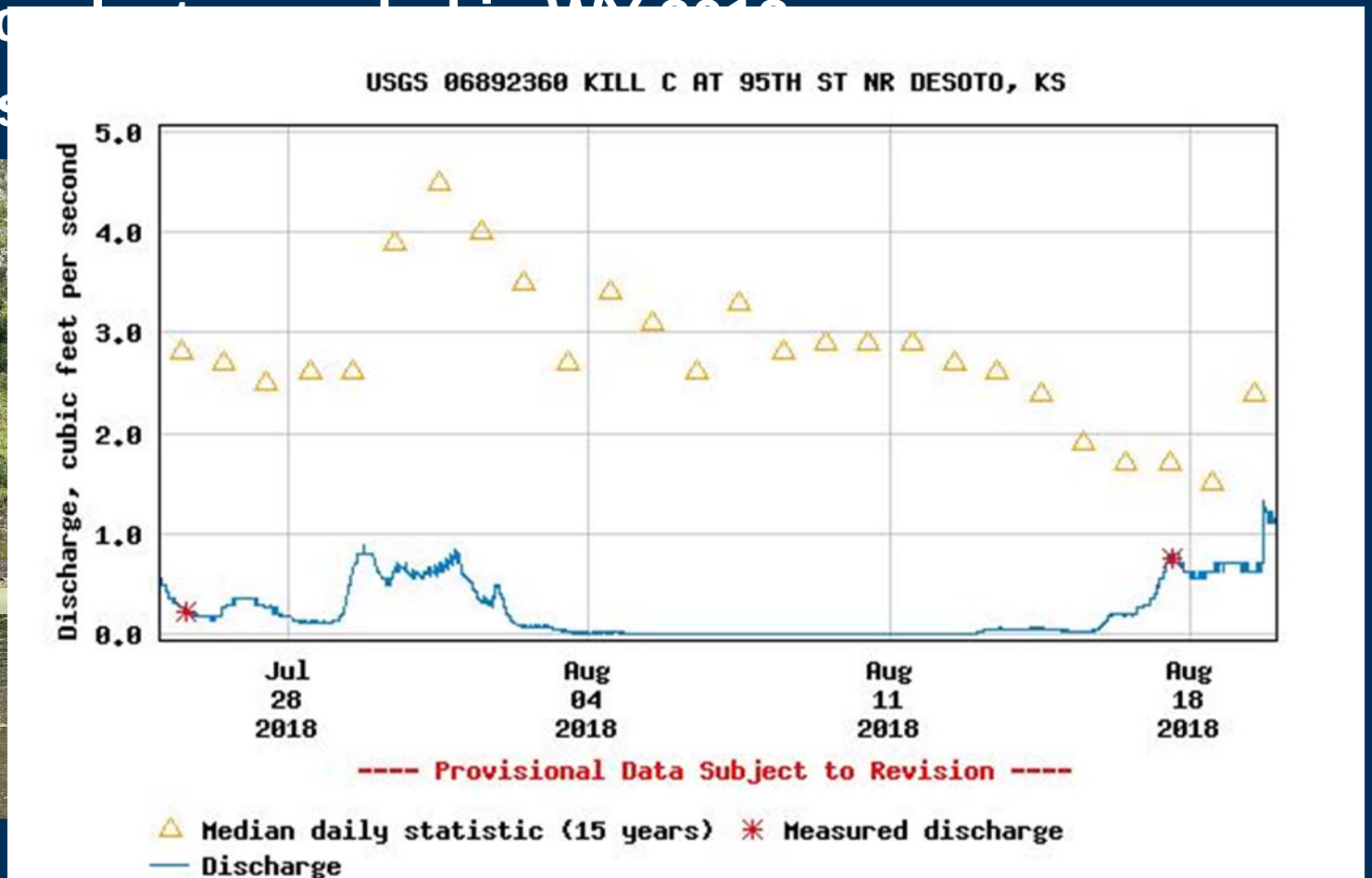
l Creek at 95th Street near DeSoto, KS (06892360)

6 days of zero flow in WY 2018

2 other years with zero flow recorded

Zero flo

55 days



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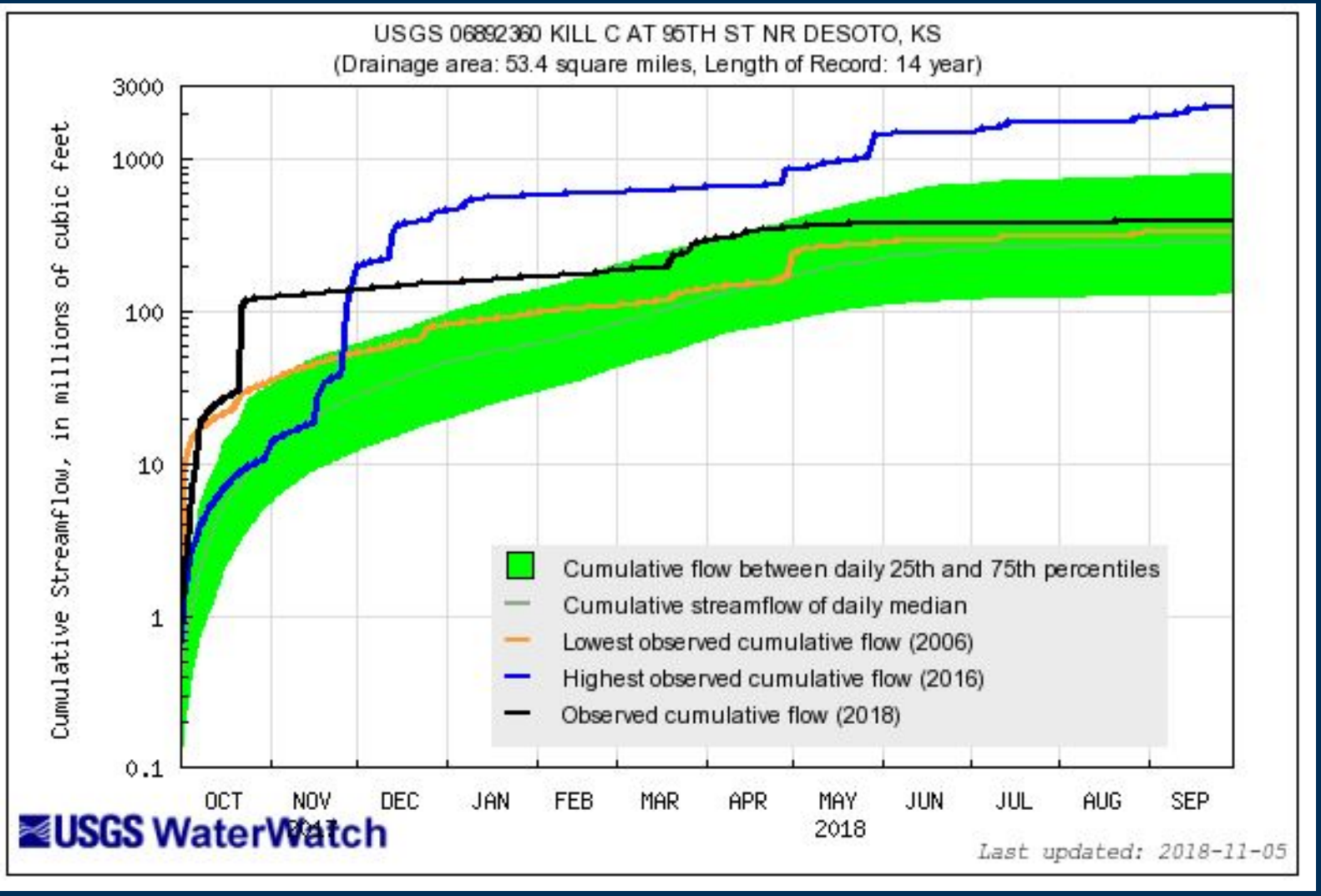
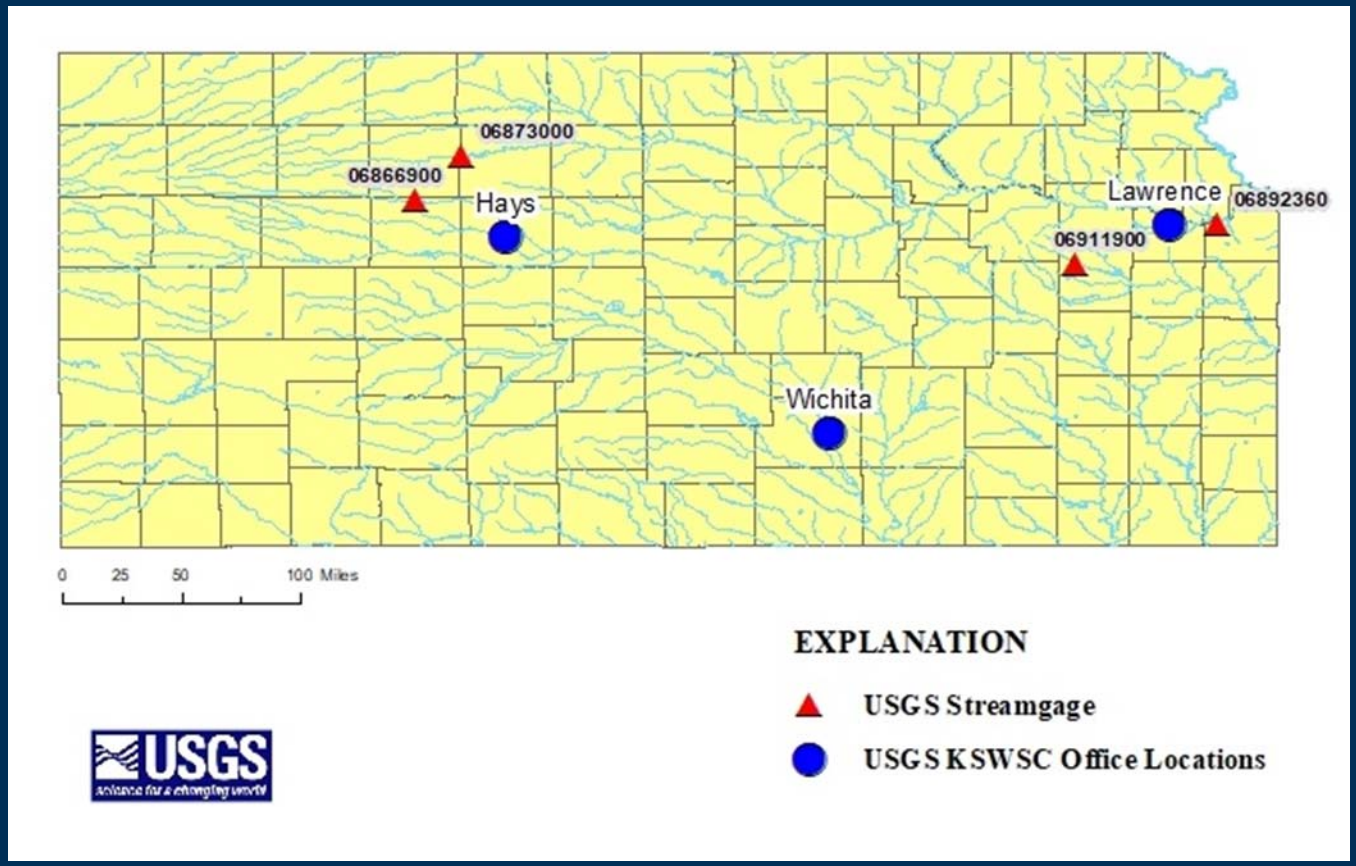


USGS

elected sites



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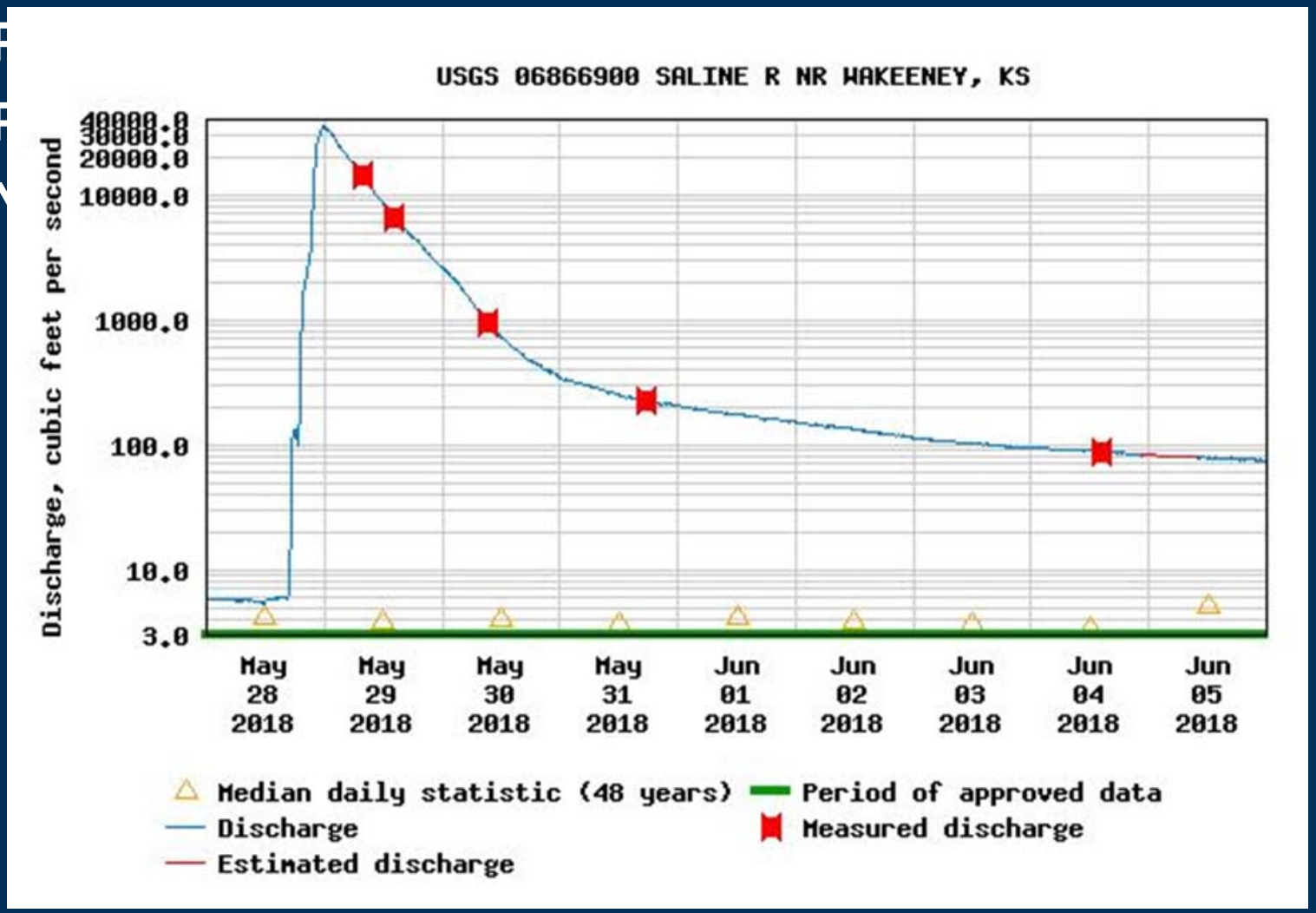
USGS

aline River near WaKeeney, KS (06866900)



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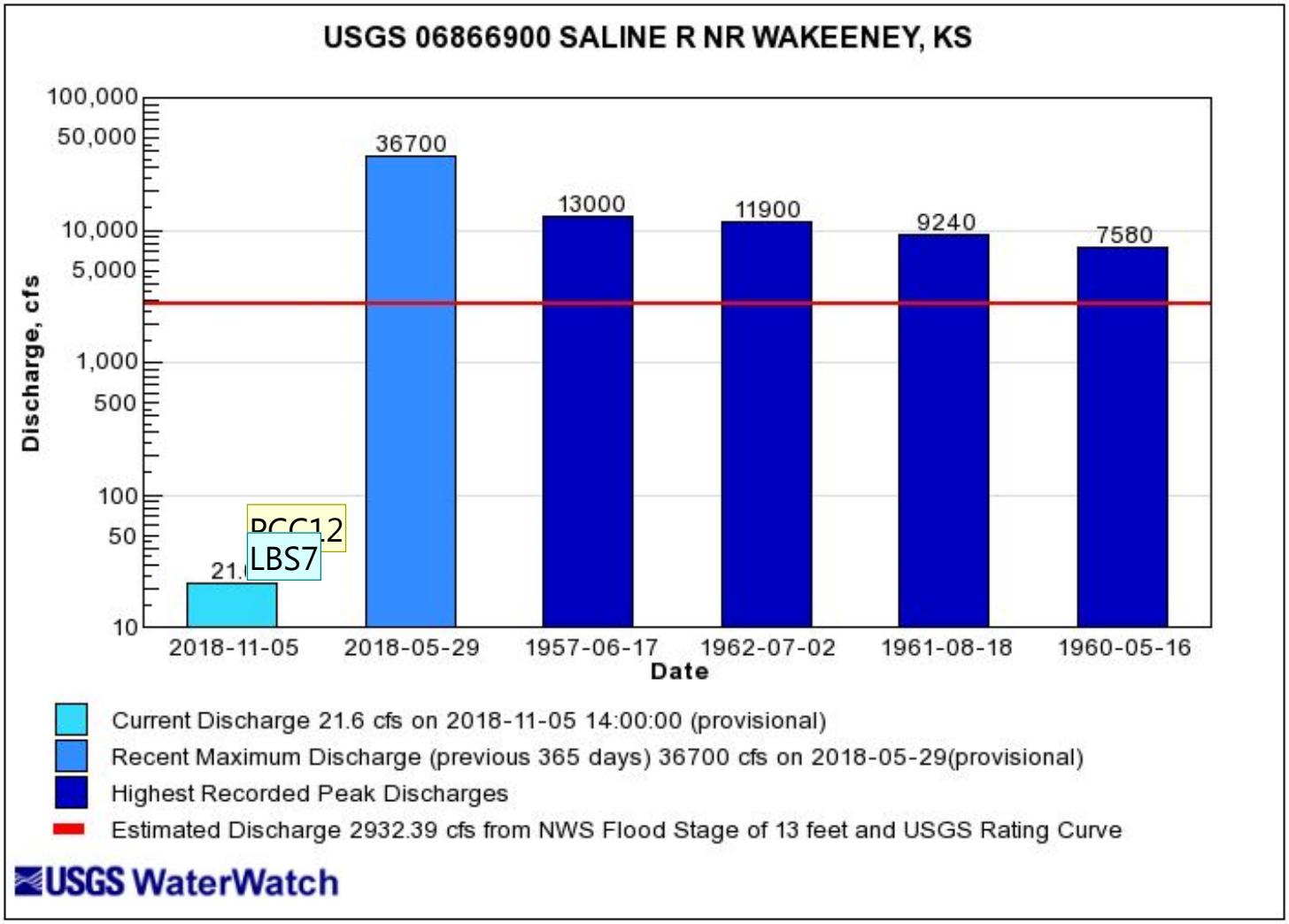


LBS7

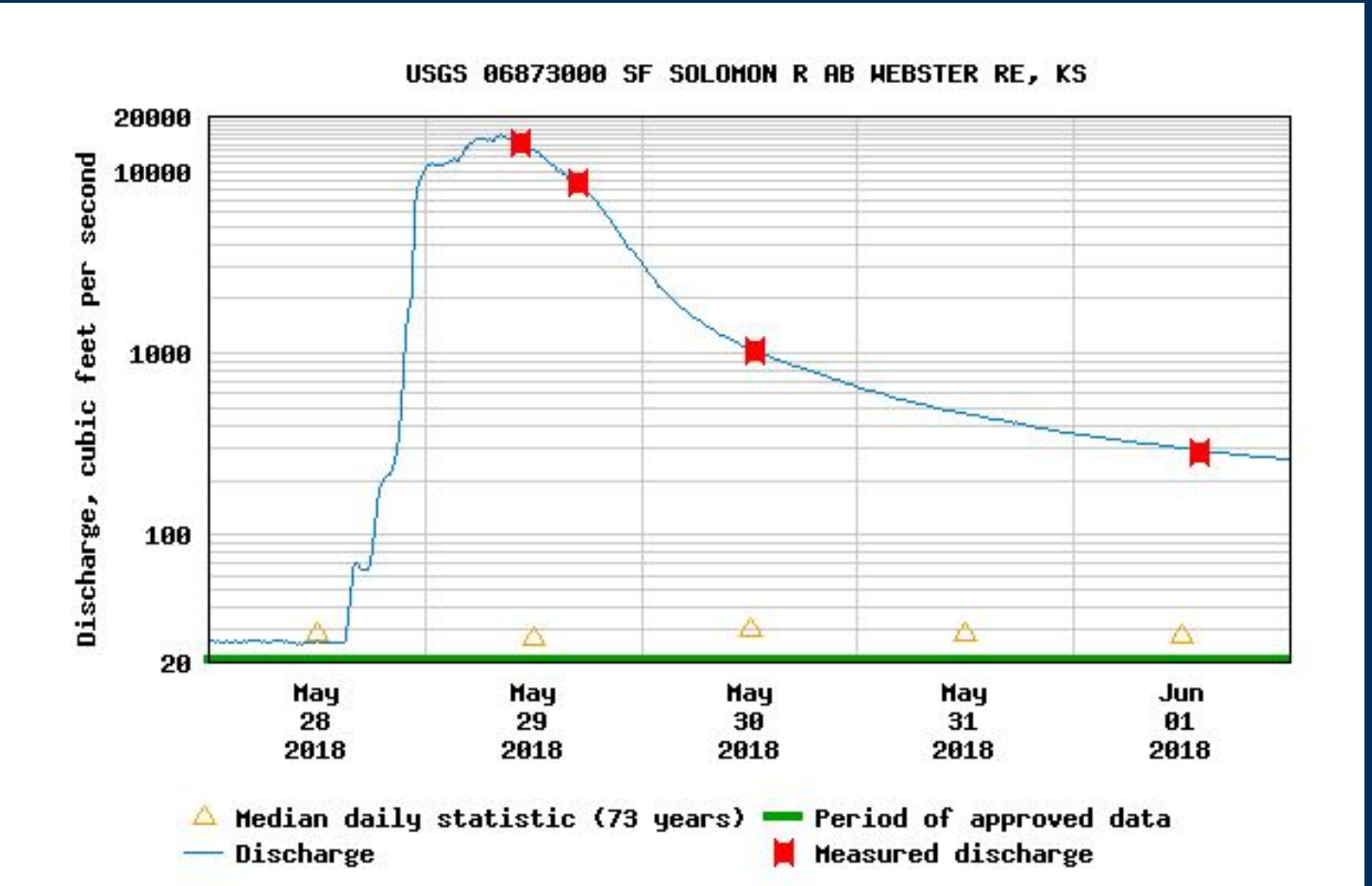
Slide 17

PCC12 Can this graphic be created without the current discharge shown? Not a big deal if it cannot, but this dates the presentation.
Painter, Colin C, 11/6/2018

LBS7 This graphic cannot be created without the 11/5 date.
Lukasz, Bradley S, 11/6/2018

F Solomon River above Webster Reservoir, KS
6873000)

Peak of 15,900 ft^3/s for WY 2018 was recorded on May
29, 201
For the
NWS F



USGS

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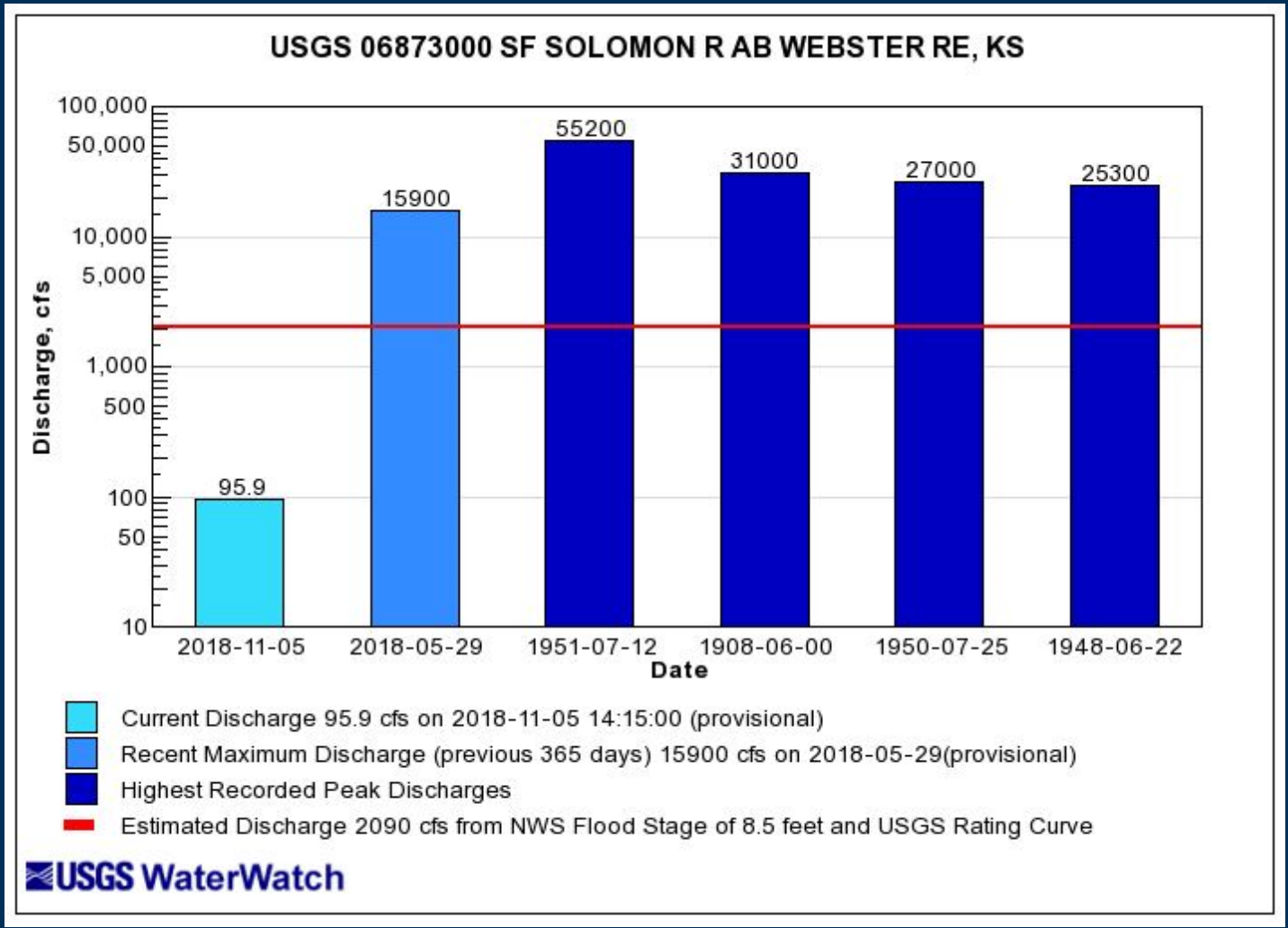


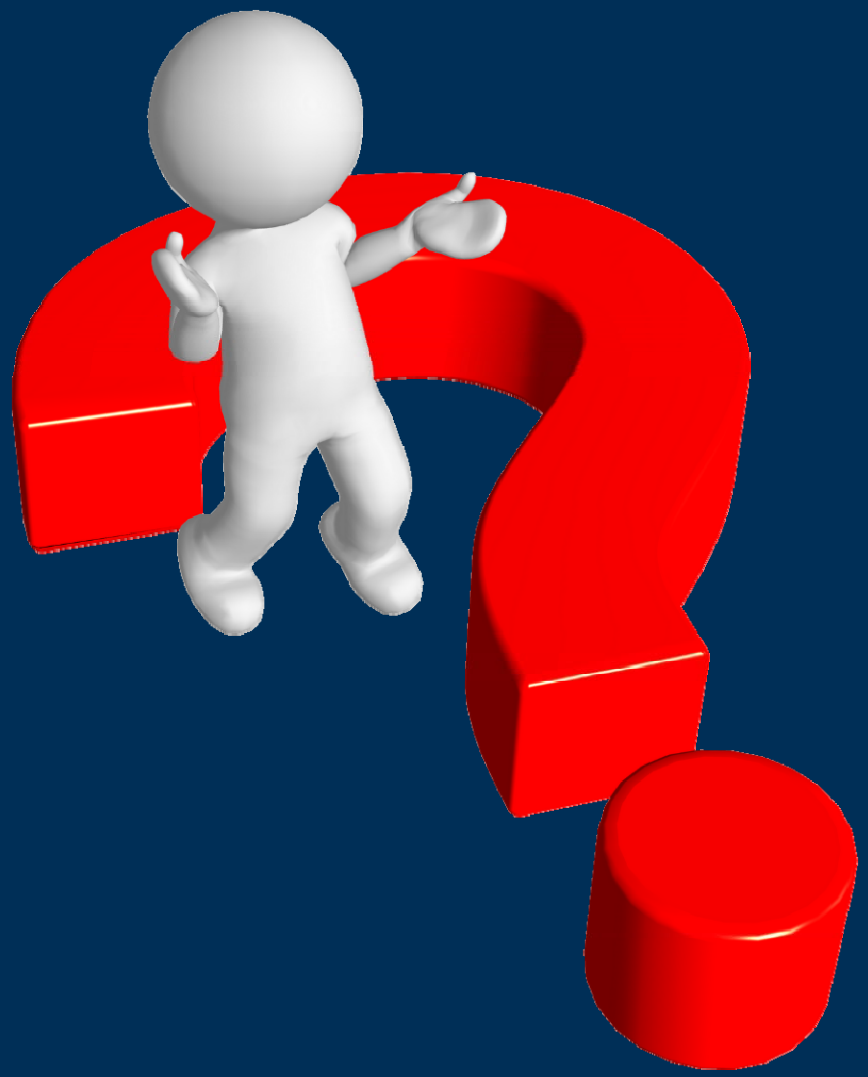
USGS

ummary

- Above normal precipitation in western Kansas, below normal precipitation in eastern Kansas for WY 2018
- Severe drought conditions in eastern Kansas by end of WY 2018
- Saline River near WaKeeney had peak of record on May 29, 2018
- Solomon River above Webster Reservoir records highest peak since May 16, 1960

USGS

uestions???



USGS

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USGS