

MISSISSIPPI RIVER LOW WATER 2022

INLAND WATERWAYS USERS BOARD MEETING NO. 98

Jim Bodron
Programs Director
U.S. Army Corps of Engineers
Mississippi Valley Division
1 December 2022

***World-Class Delivery...
Real-World Impact!***



US Army Corps
of Engineers®

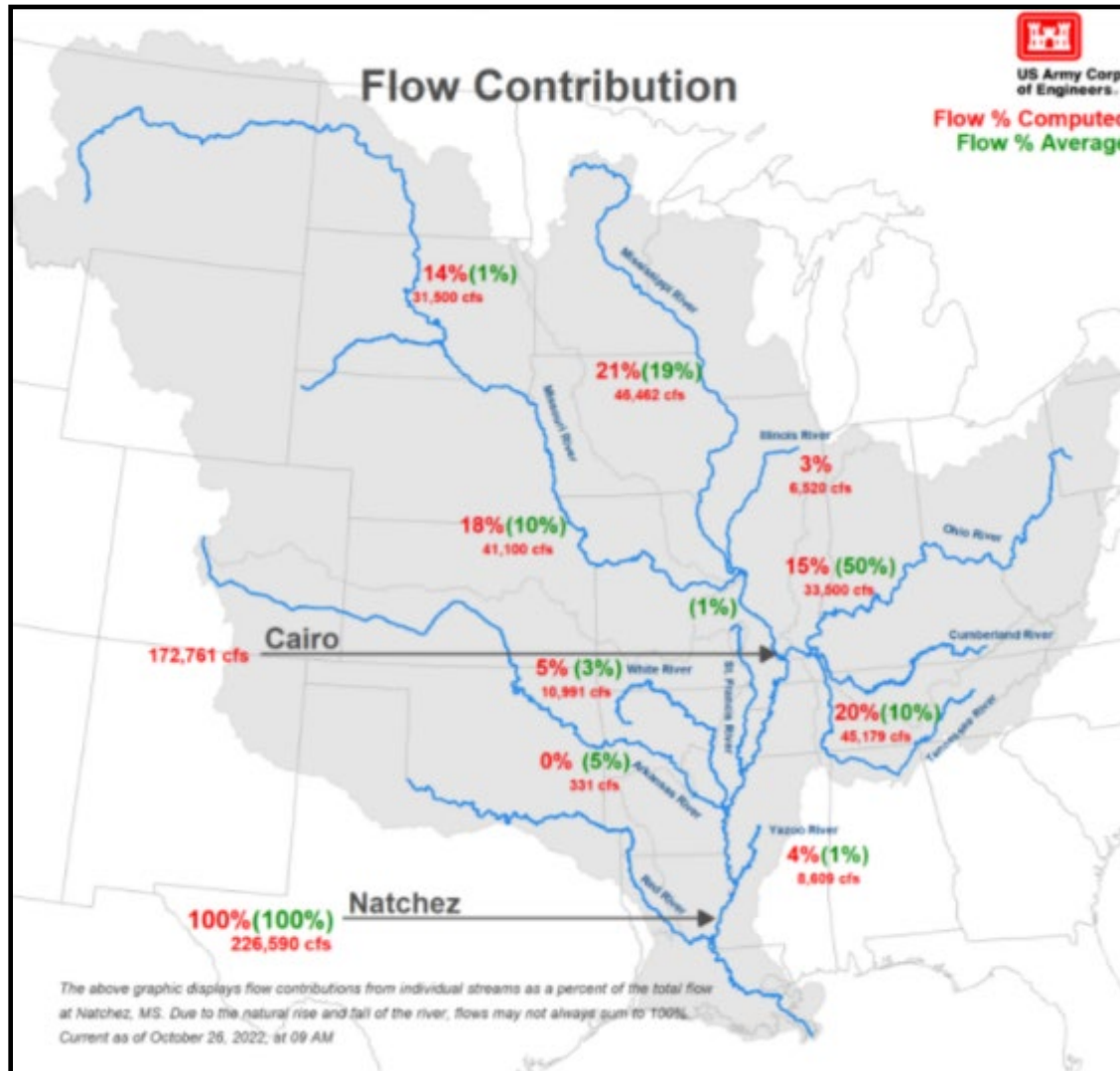




PROJECT OVERVIEW OF SCOPE



USACE is tasked with maintaining a 9 ft x 300 ft channel for navigation purposes.

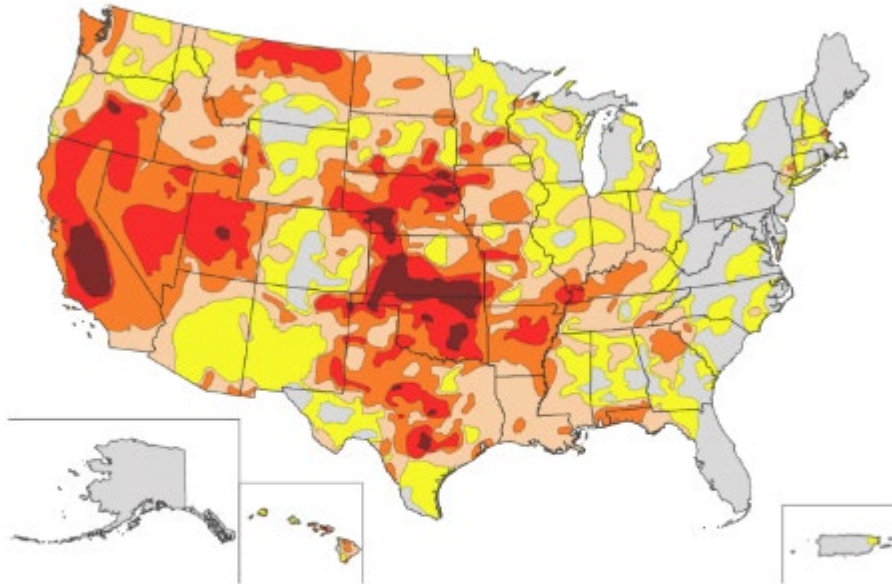




NO RAIN → LOW STAGES



U.S. Drought Monitor



U.S. Drought Monitor Category

 D0 - Abnormally Dry	70.6%
 D1 - Moderate Drought	52.6%
 D2 - Severe Drought	30.1%
 D3 - Extreme Drought	12.2%
 D4 - Exceptional Drought	2.4%

*Percentages are cumulative, so D0 shows the percent of the U.S. in D0 or worse (D0-D4)

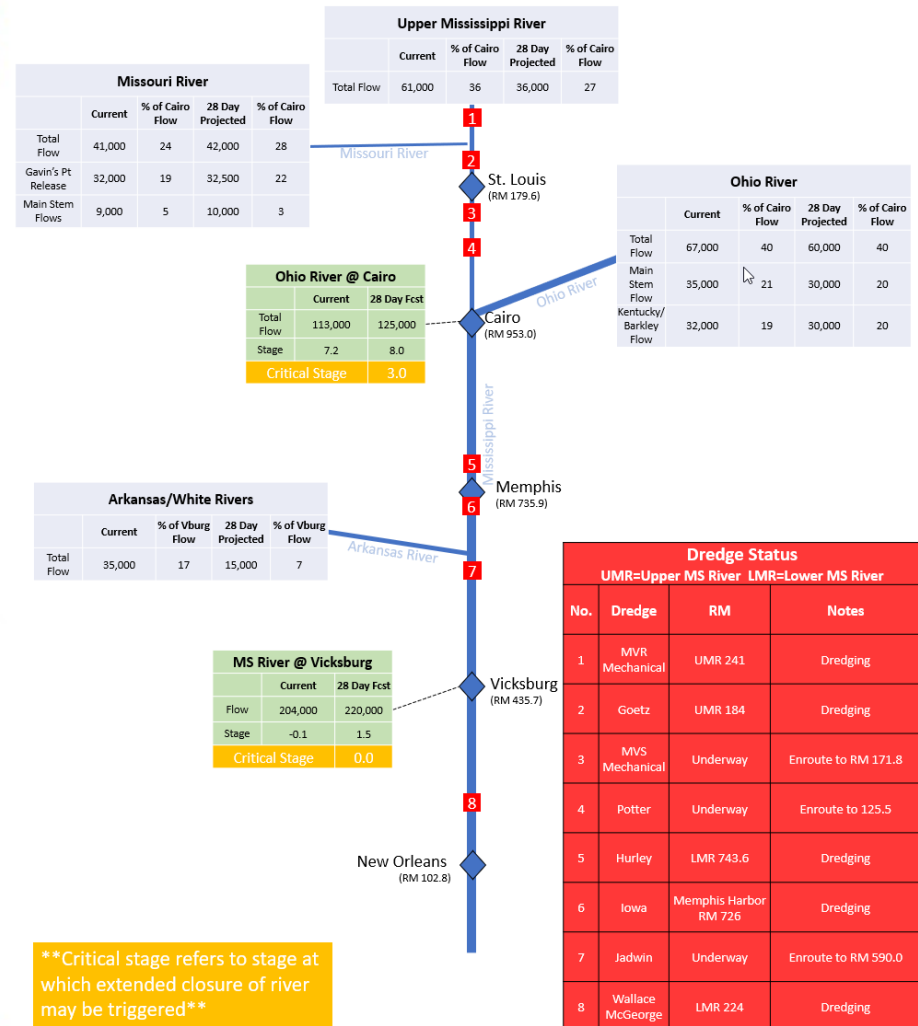
Source(s): NDMC, NOAA, USDA
Updates Weekly - 10/25/22

Drought.gov

MS Valley Low Flow Status

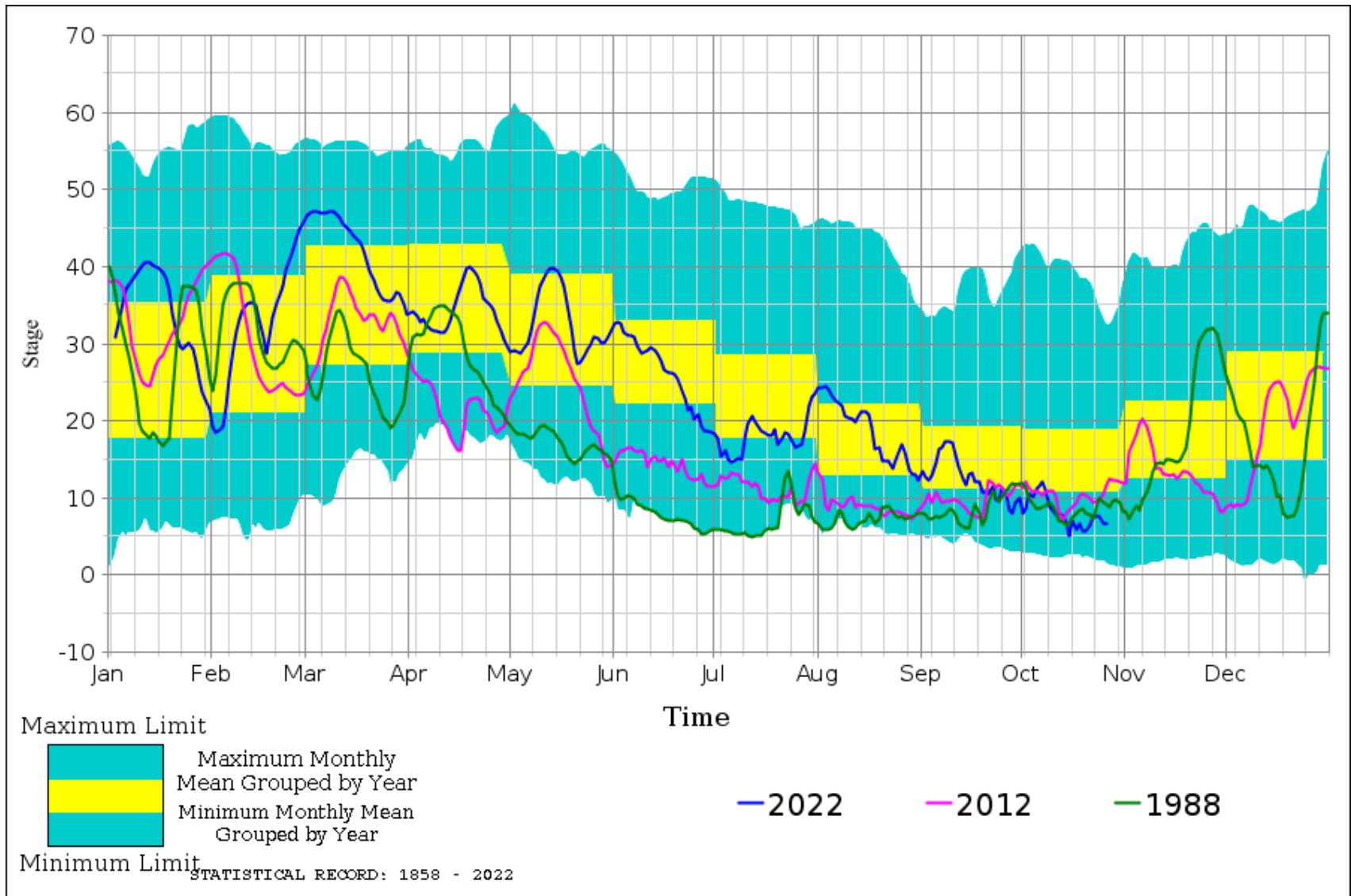
October 26, 2022

- Graphic below describes flows on each of these systems that are supplying flow to the mainstem Mississippi River and what is forecasted in 28 days
- Also included are current active dredge locations



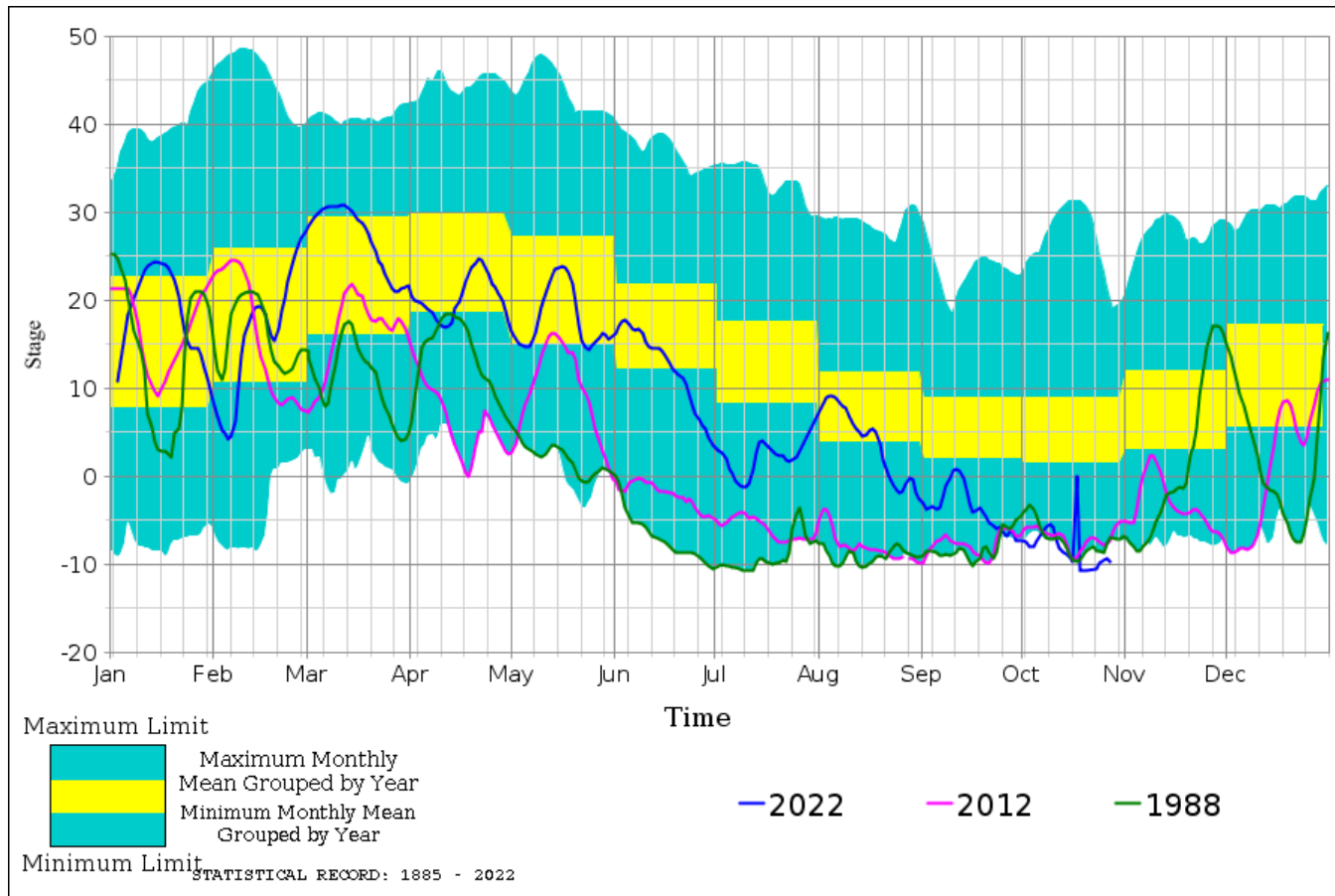


CAIRO, IL STAGE COMPARISON



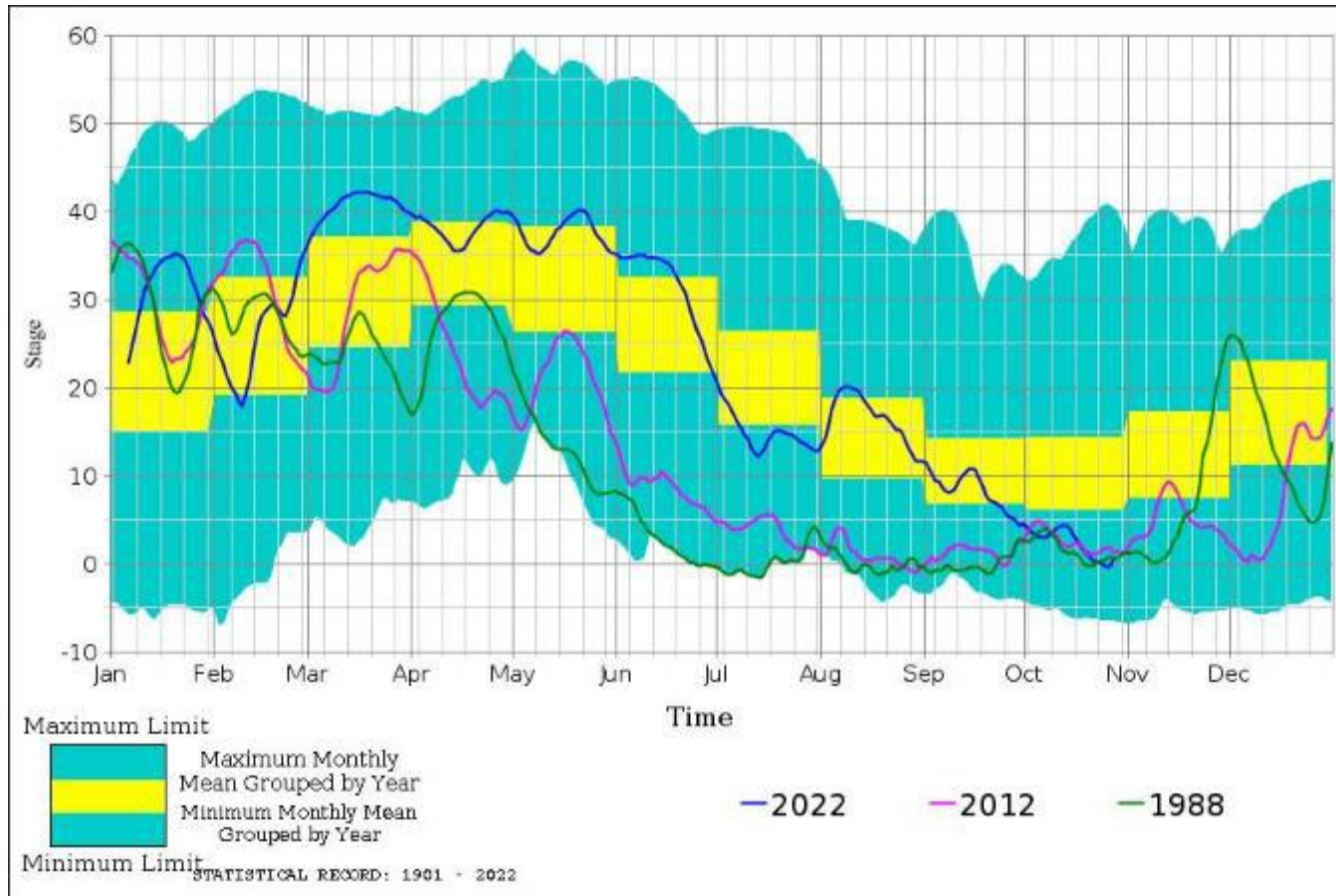


MEMPHIS, TN STAGE COMPARISON





VICKSBURG, MS STAGE COMPARISON





Historical Low Water Events

Lower Mississippi River Forecast Center

Current stage and forecast data as of October 26th 2022

Forecast Location	Current Stage	Forecast Low Stage	2012	2000	1988
Cairo, IL*	6.6 ft	5.6 ft	7.2 ft	8.5 ft	4.9 ft
Memphis, TN*	-9.25 ft	-10.5 ft	-9.8 ft	-9.2 ft	-10.7 ft
Arkansas City, AR	-2.1 ft	-3.0 ft	-3.2 ft	-2.9 ft	-5.0 ft
Greenville, MS	6.23 ft	5.9 ft	6.9 ft	8.2 ft	7.3 ft
Vicksburg, MS	-0.1 ft	-0.1 ft	-1.1 ft	0.2 ft	-1.6 ft
Red River Landing, LA	14.24 ft	13.7 ft	13.0 ft	13.1 ft	10.0 ft
Baton Rouge, LA	4.47 ft	3.8 ft	3.4 ft	3.9 ft	1.8 ft

* Locations that have preliminarily broken modern day low water records

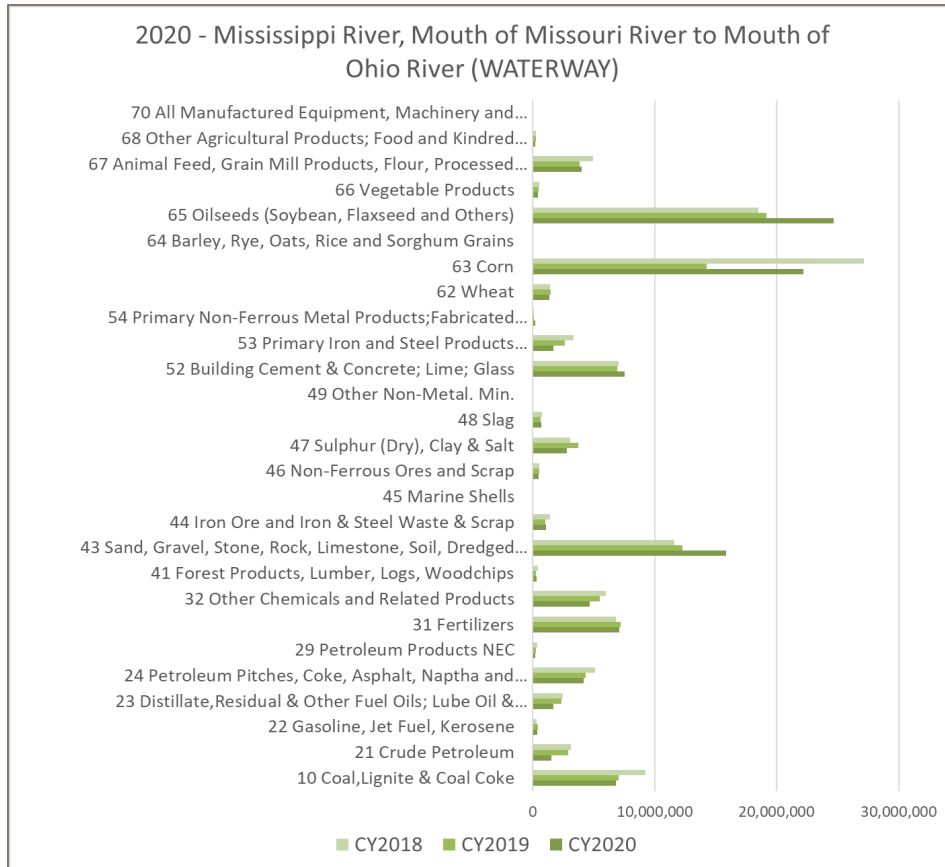
Numbers in Red are the lowest forecast stage based on the 28 day forecast

Data provided by U.S. Army Corps of Engineers



COMMODITIES (TONS); ST LOUIS IL - CAIRO IL

8

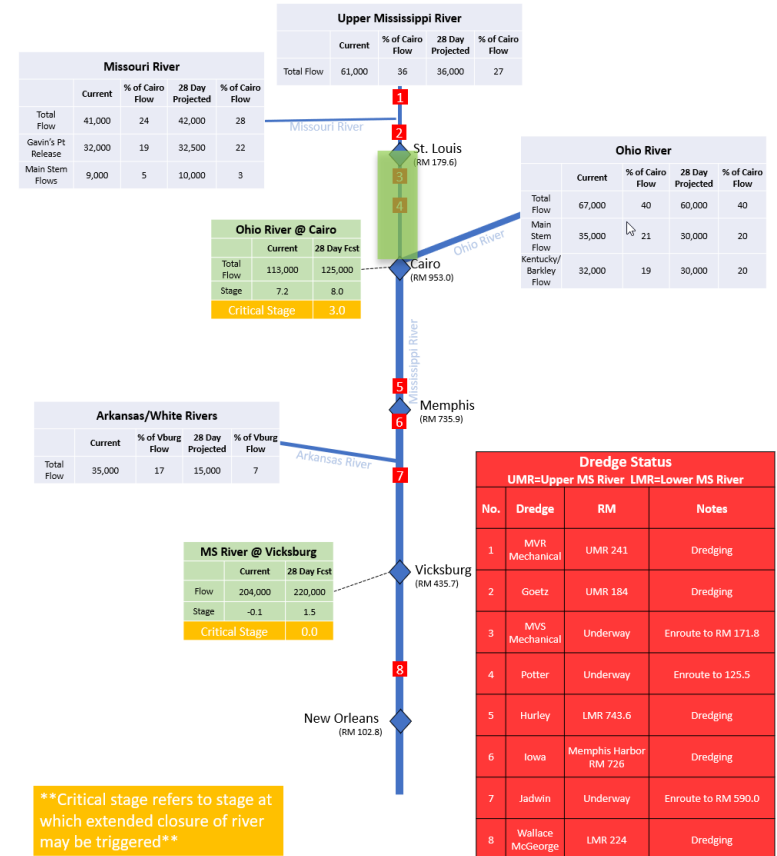


Source: <https://ndc.ops.usace.army.mil/wcsc/webpub/#/>

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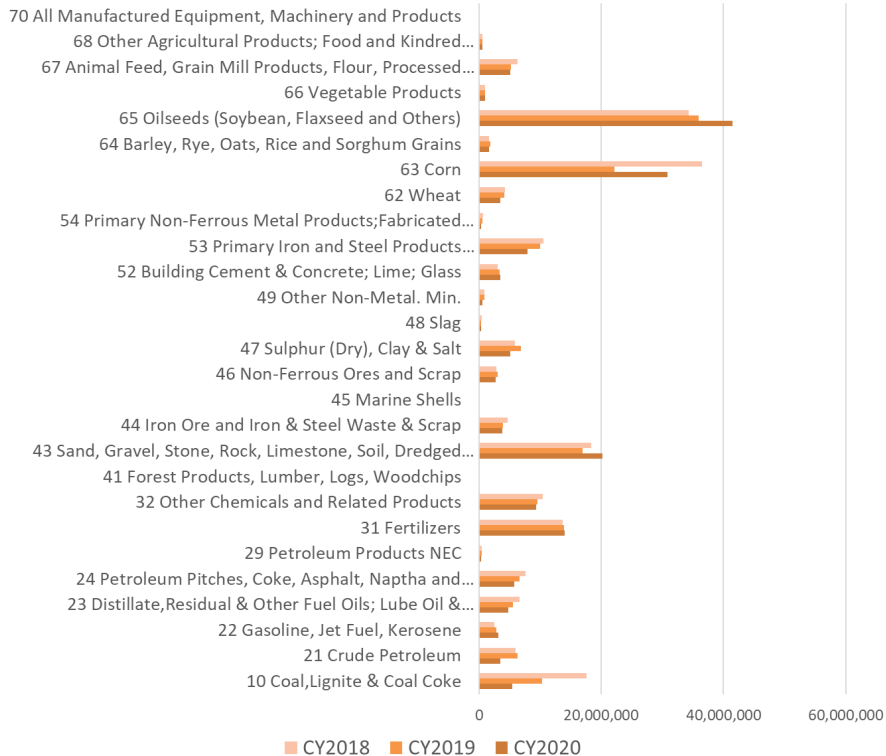




COMMODITIES (TONS) – SOUTH OF CAIRO IL TO BATON ROUGE LA



2020 - Mississippi River, Mouth of Ohio River to Baton Rouge, LA (WATERWAY)

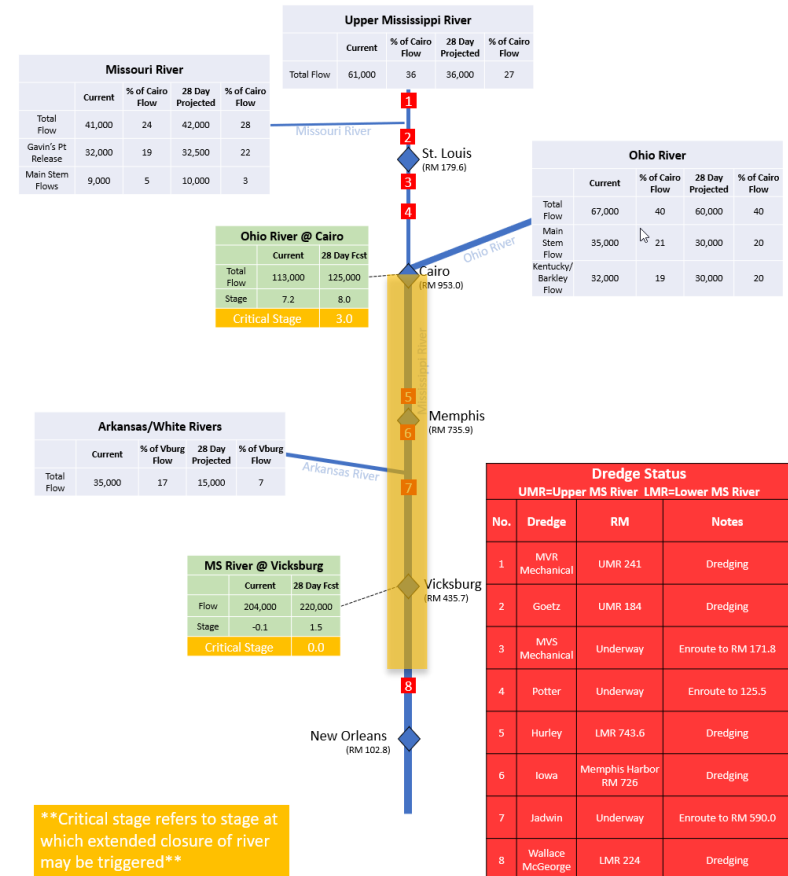


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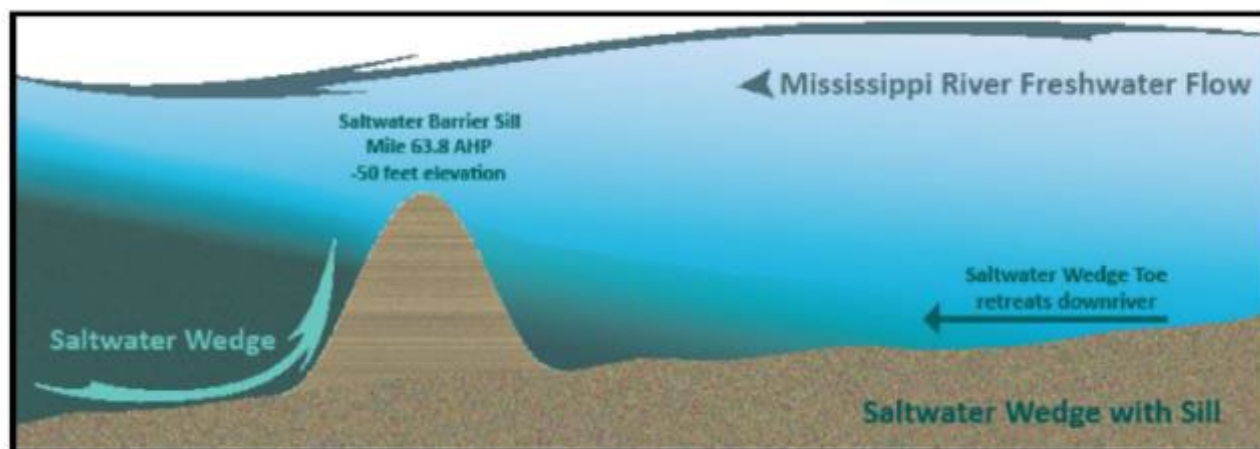
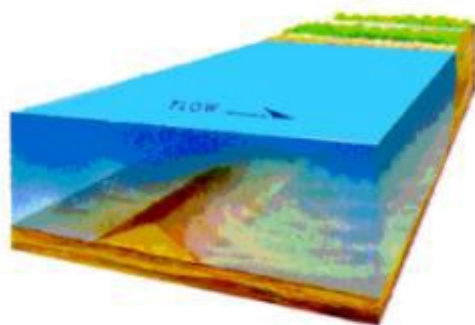
****Critical stage refers to stage at which extended closure of river may be triggered****



SALTWATER WEDGE SILL



- Saltwater Barrier Sill was constructed at River Mile 63.8 to prevent saltwater intrusion. The dredging contract was awarded to Weeks Marine and construction commenced on 11 OCT 22 and was completed to the target elevation of -55 feet, on 22 OCT 22. The maximum draft recommendation for the Mississippi River Ship Channel remains at 50' to the Huey P. Long Bridge. If the approaching saltwater wedge requires the sill to be built higher than -52 feet, draft restrictions may be required. This sill will prevent the underwater saltwater wedge from threatening water supply intakes.





WHAT CAN WE DO ABOUT IT?



Manage Reservoirs to Add Water:

- Missouri River Basin Reservoirs (Omaha District).
 - ✓ Legal Limitations.
 - ✓ NWD starts minimum flows on Nov 18 → effects will be seen on Mississippi River by Nov 28.
- Mississippi River Basin Reservoirs (St Louis District).
 - ✓ Minimal Impact.
 - ✓ Current plan is to hold on to that water until after 28 Nov when the navigation flows on the Missouri River end.
- Ohio River Basin Reservoirs (Kentucky and Barkley on the Cumberland and Tennessee Rivers)
 - ✓ The plan is to have these reservoirs provide flow augmentation through December.
 - ✓ Limited effect (and no impact north of Cairo IL to St Louis MO).
 - ✓ LRD is also working with TVA to limit 'peaking' hydropower flow in favor of more steady releases.



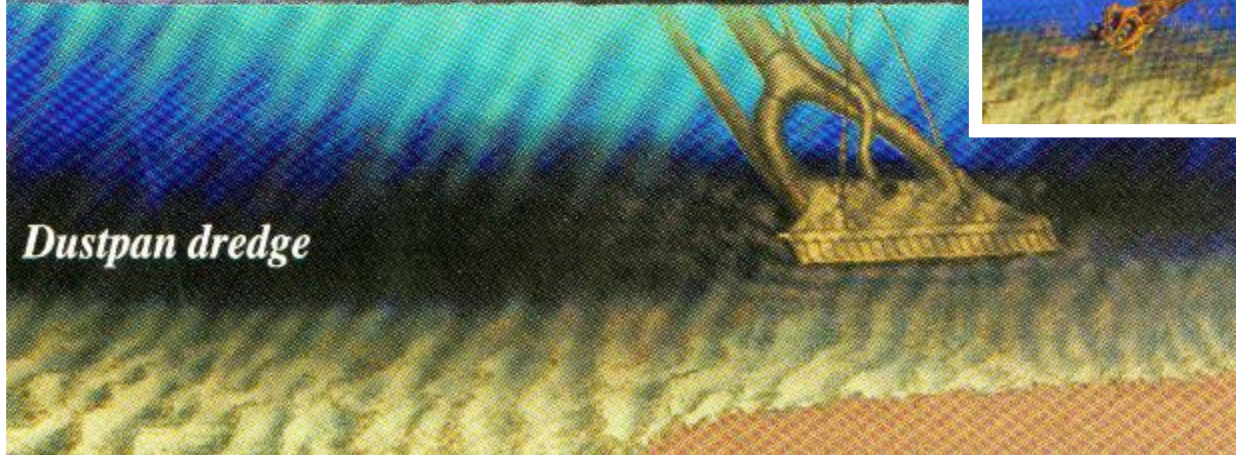
WHAT CAN WE DO ABOUT IT?



- Continue Communication with Industry. Robust protocols for continuous communication are in place with industry at the regional and District level
- Channel Marking:
 - ✓ USACE is working with the USCG to relocate the marking buoys (Aids to Navigation/ ATONs).
 - ✓ To supplement this effort, virtual ATONs are placed in the electronic navigation system to aid pilots in locating the channel
- Maintain Authorized Depth Where Possible.
 - ✓ Survey channel to identify shoaling
 - ✓ Dredge shoaling locations
 - ✓ Creates temporary impacts to navigation traffic



CHANNEL IMPROVEMENT - DREDGING



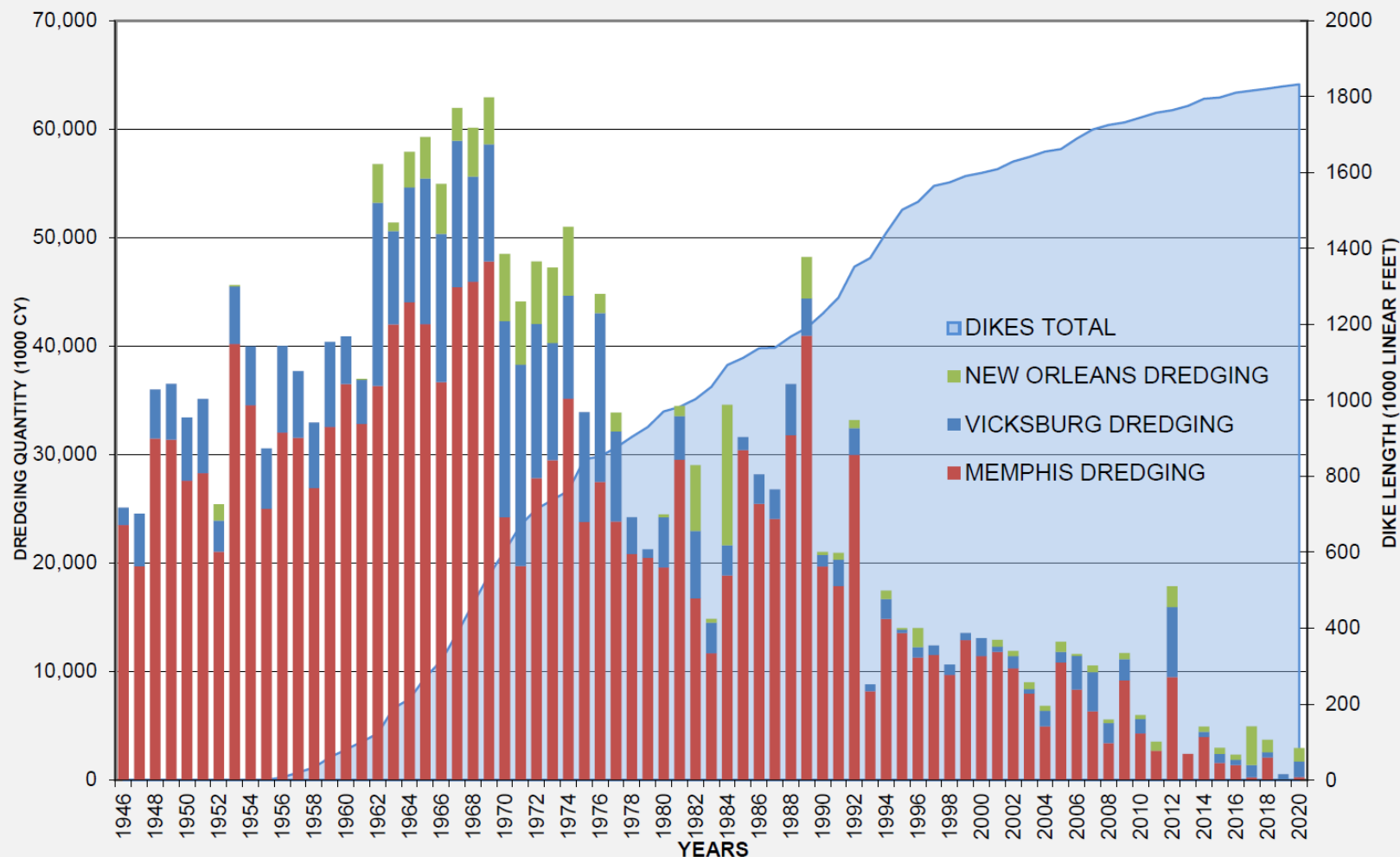
Dustpan dredge



Cutterhead pipeline dredge



MISSISSIPPI RIVER & TRIBUTARIES PROJECT CUMULATIVE DIKE LENGTH vs DREDGING





THANK YOU

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