

INLAND WATERWAYS USERS BOARD MEETING #99

Patrick Chambers
Chief, Operations & Regulatory
Mississippi Valley Division

April 13, 2023

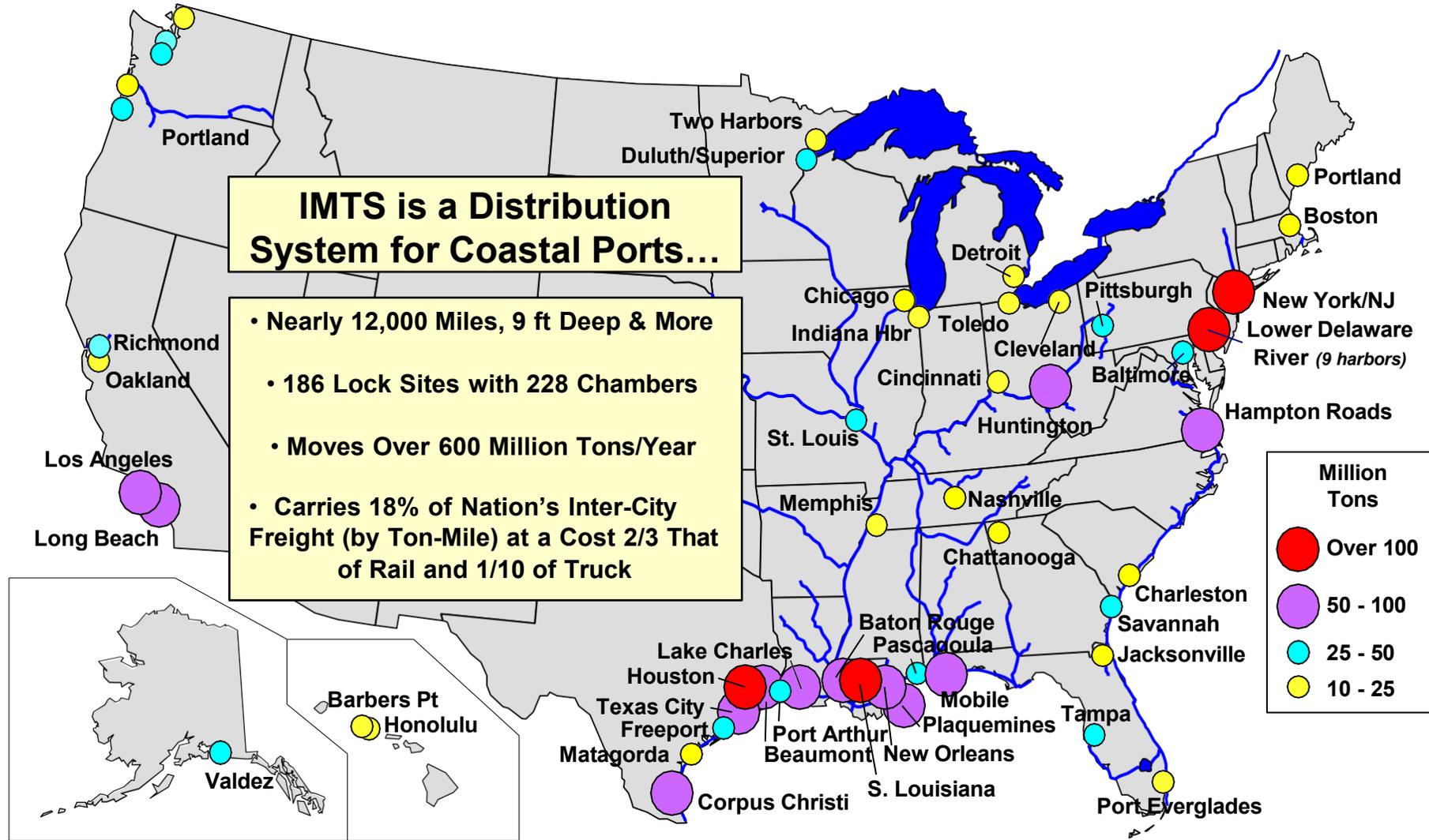


US Army Corps
of Engineers®





A Maritime Nation





Our Geographical Advantage



“The Center Coast”

Prime Agricultural Lands

	>50% cultivated
	15% - 50% cultivated



ENGINEERING A RESILIENT RIVER



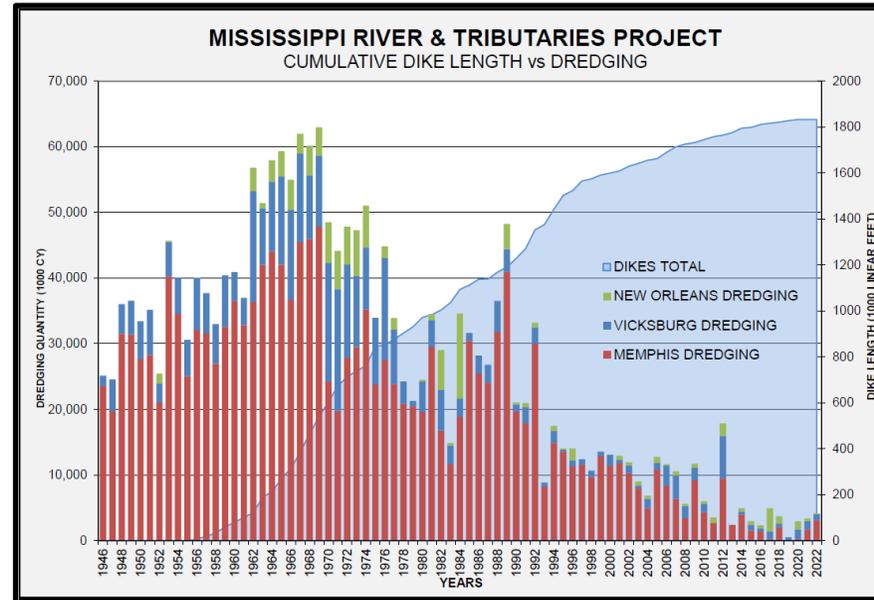
Aerial view of chevrons on the MS River



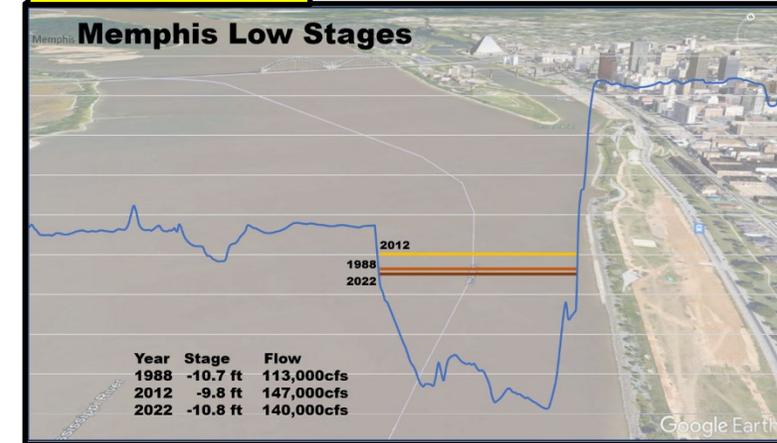
Rock Pinnacle removal at Thebes, IL



Dredging during drought facilitates NAV



Dynamic River





DELIVERING THE SUPPLY CHAIN DURING EXTREME DROUGHT

(AS OF 17 NOV 2022)

VALUE TO THE NATION

MISSISSIPPI RIVER ANNUAL TONNAGE VALUE:

~\$2 TRILLION

MISSISSIPPI RIVER ANNUAL TONNAGE:

681 MILLION SHORT TONNES OF CARGO

TOP FIVE MISSISSIPPI RIVER COMMODITIES



PETROLEUM & PETRO-CHEM PRODUCTS



CHEMICALS & RELATED PRODUCTS



COAL



FOOD & FARM PRODUCTS
(Corn & Soybean Primarily)



CRUDE MATERIALS

U.S. ARMY CORPS OF ENGINEERS

MISSISSIPPI RIVER

LOW WATER EVENT 2022

START DATE OF EVENT: 01 SEP 2022

When our nation's busiest commercial waterway is impacted by low water levels, USACE working with Federal, State, and Local partners levy resources to create action.

CONSISTENT INVESTMENT | USACE MISSISSIPPI RIVER INVESTMENT SINCE 2012

BIPARTISAN INFRASTRUCTURE LAW

\$274 MILLION

Investment to address damages incurred to revetments and dikes from prior high water events and to address dredging needs.

MISSISSIPPI RIVER & TRIBUTARIES PROJECT (MR&T)

\$1.52 BILLION

Investment in revetments and dikes; nearly 2.2M revetment squares sunk equaling roughly 120 miles of work, and approximately 14 miles of new dikes constructed.

REGULATED WORKS

\$55.2 MILLION

Investment to remove additional rock at Thebes and Grand Tower (Pinnacles), placed 3.5 miles of revetment to stabilize the river channel and to construct nearly 50 river training structures including dikes, weirs and chevrons.

PROACTIVE MITIGATION



NUMBER OF ACTIVE DREDGES BY TYPE:

8 TOTAL

CUTTERHEAD DREDGE **3**

DUSTPAN DREDGE **4**

MECHANICAL DREDGE **1**

DOLLARS INVESTED IN LOW WATER 2022 DREDGING SINCE 01 SEP 2022:

\$29.6 MILLION

CUBIC YARDS (CYS) OF DREDGED MATERIAL SINCE 01 SEP 2022:

9.2 MILLION CYS



U.S. Army Corps of Engineers®

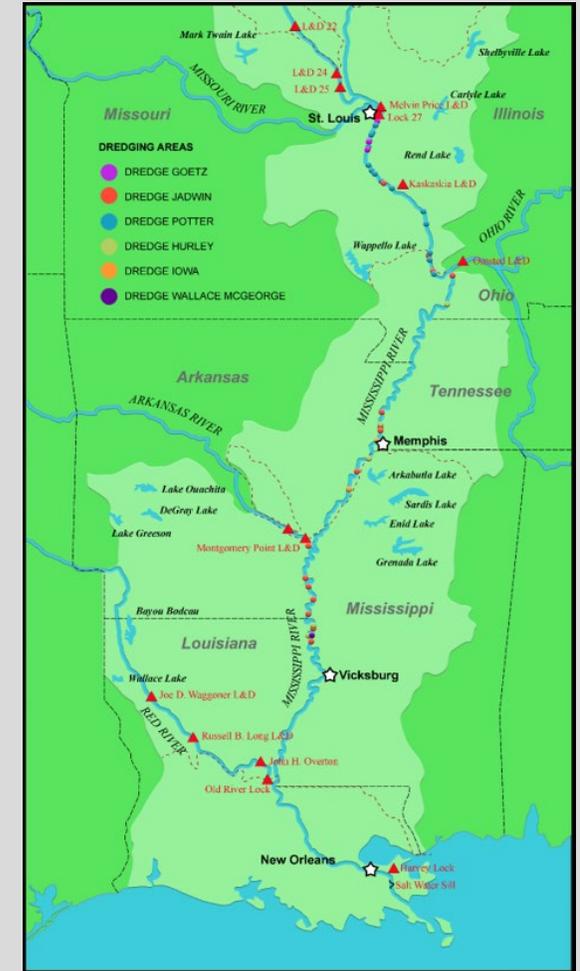




2022 LOW WATER TIMELINE



- ❖ Low water event started September 2022
- ❖ Dustpan dredges released from the deep draft early and were able to work the low water
 - ❖ Jadwin released from deep draft on July 18
 - ❖ Hurley released from deep draft on September 28
- ❖ 17 Oct → Record low stage at Cairo, IL (4.8 ft.)
- ❖ LRD/TVA coordinate releases at Kentucky/Barkley
- ❖ Coordination with the National Economic Council began
- ❖ Saltwater sill was built at LMR 64
 - ❖ Took 11 days to construct, completed on 21 Oct 2022
- ❖ 21 Oct → Record low stage at Memphis, TN (-10.8 ft)
 - ❖ Lowest stage at Baton Rouge, LA (4.2 ft)
- ❖ 28 Nov → Initial impacts of Missouri River reductions at St. Louis, MO
- ❖ 14 Dec → Full impacts of Missouri River reductions at St. Louis, MO
- ❖ 25 Dec → Lowest stage at St. Louis, MO (-3.9 ft)
- ❖ Contract dustpan dredge Wallace McGeorge started working at Stack Island
- ❖ 18 Jan 23 → Dredges completed work in response to low water
- ❖ 64 locations dredged
 - ❖ 10M CYs of material from the mainstem river
 - ❖ Cost of \$36M





LOW WATER EFFECTS ON PORTS AND HARBORS





LIMITATIONS & LESSONS LEARNED



- ❖ All dustpan dredges are older than 30 years and two are older than 90 years old
- ❖ Limitations
 - ❖ Potter – Can't work in deep draft or high flows
 - ❖ Jadwin – Underpowered for high current areas
 - ❖ Wallace McGeorge – Only contract dustpan dredge
- ❖ Offset maintenance allowed only one dustpan dredge to be down at a time
- ❖ Pre-low water harbor maintenance dredging minimized light loading
- ❖ Lessons Learned
 - ❖ Develop Low Water process like High Water Plan
 - ❖ Long range stage forecasts should have range of outcomes
 - ❖ Peaking hydropower operations quickly effect mainstem stages
 - ❖ Gaps in LOMA make eATONs difficult to keep up to date
- ❖ Channel Improvement Program kept the channel efficient during low flow!!

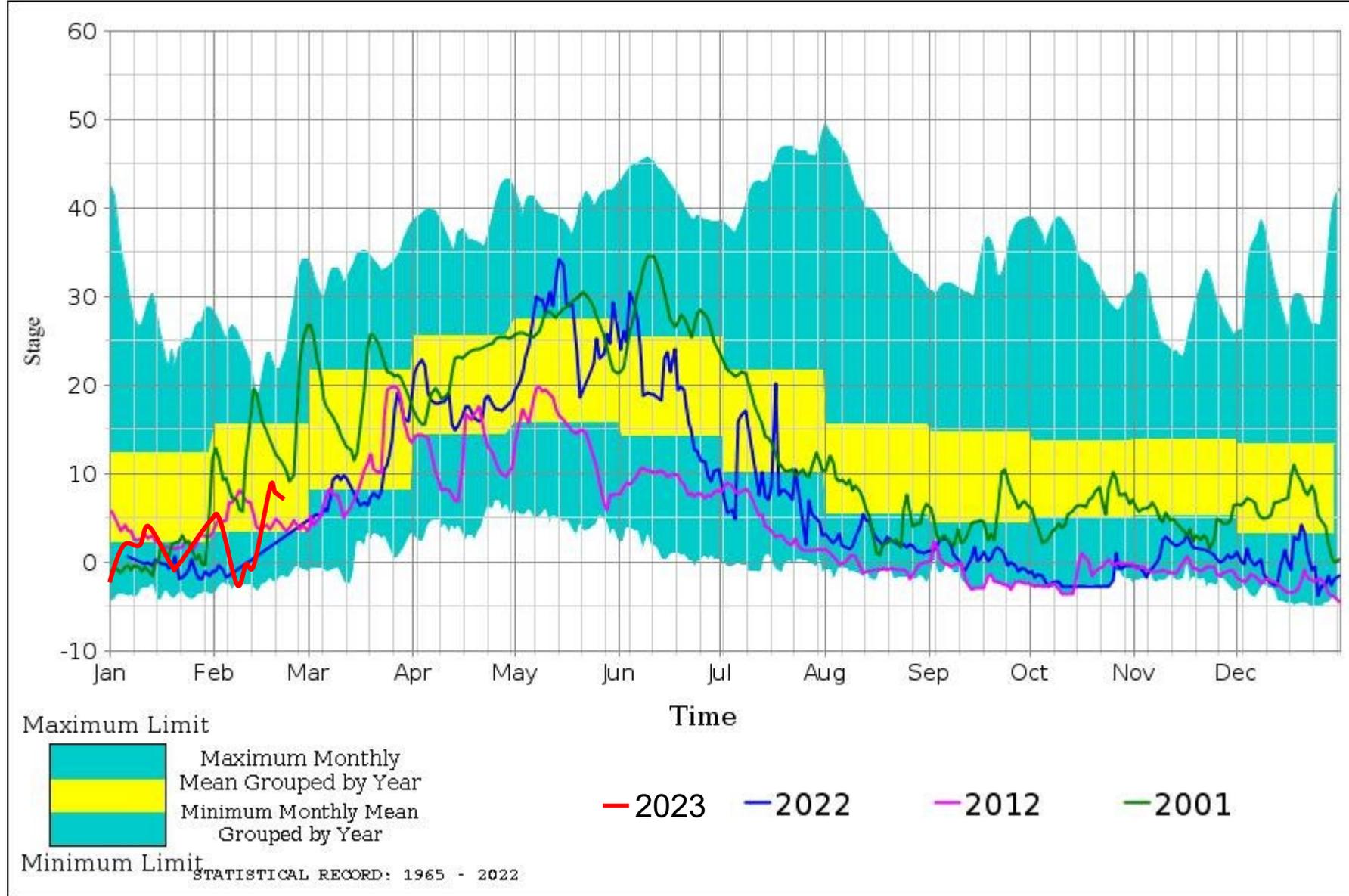


In Closing...



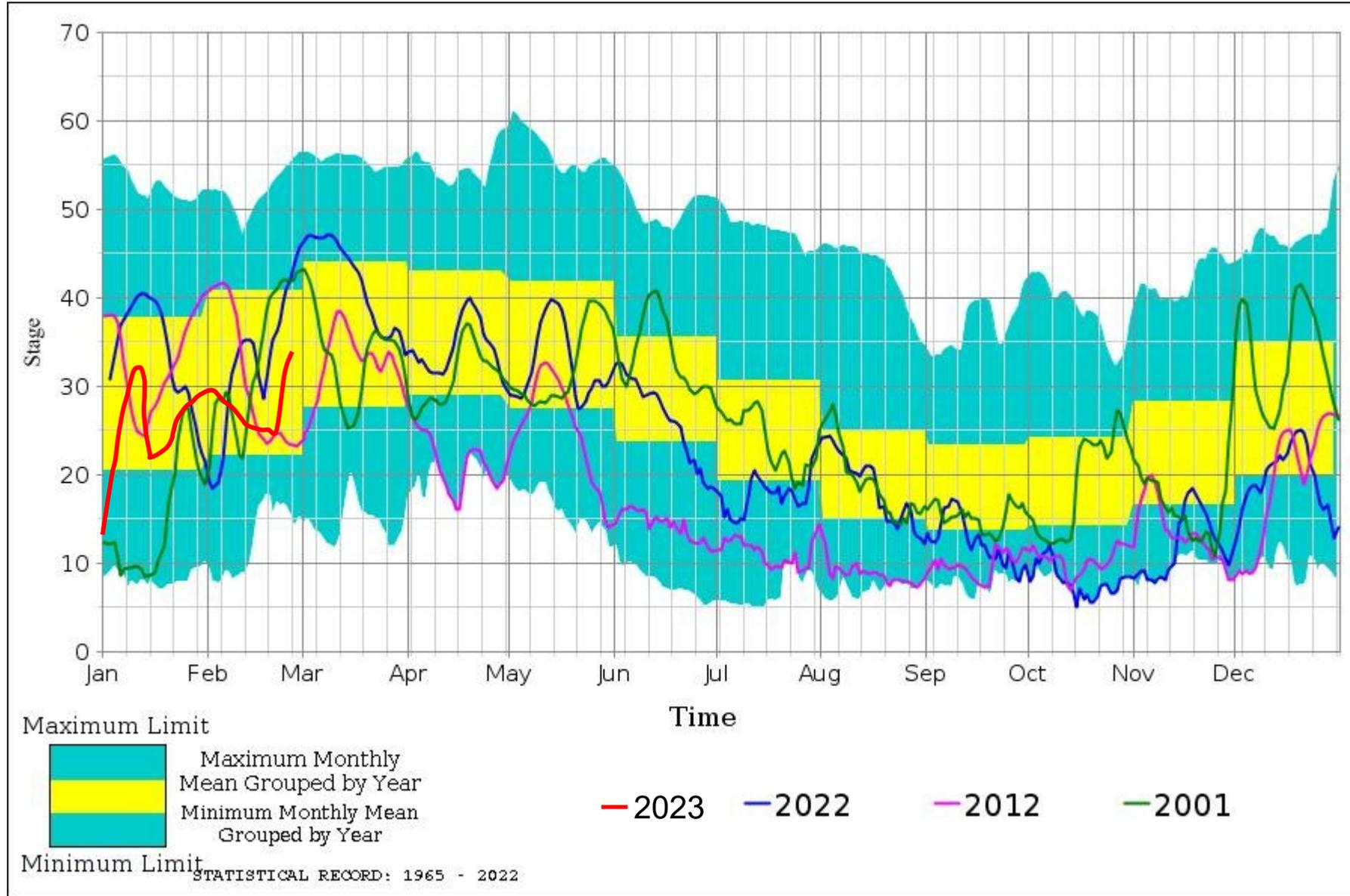


MISSISSIPPI RIVER @ ST. LOUIS, MO



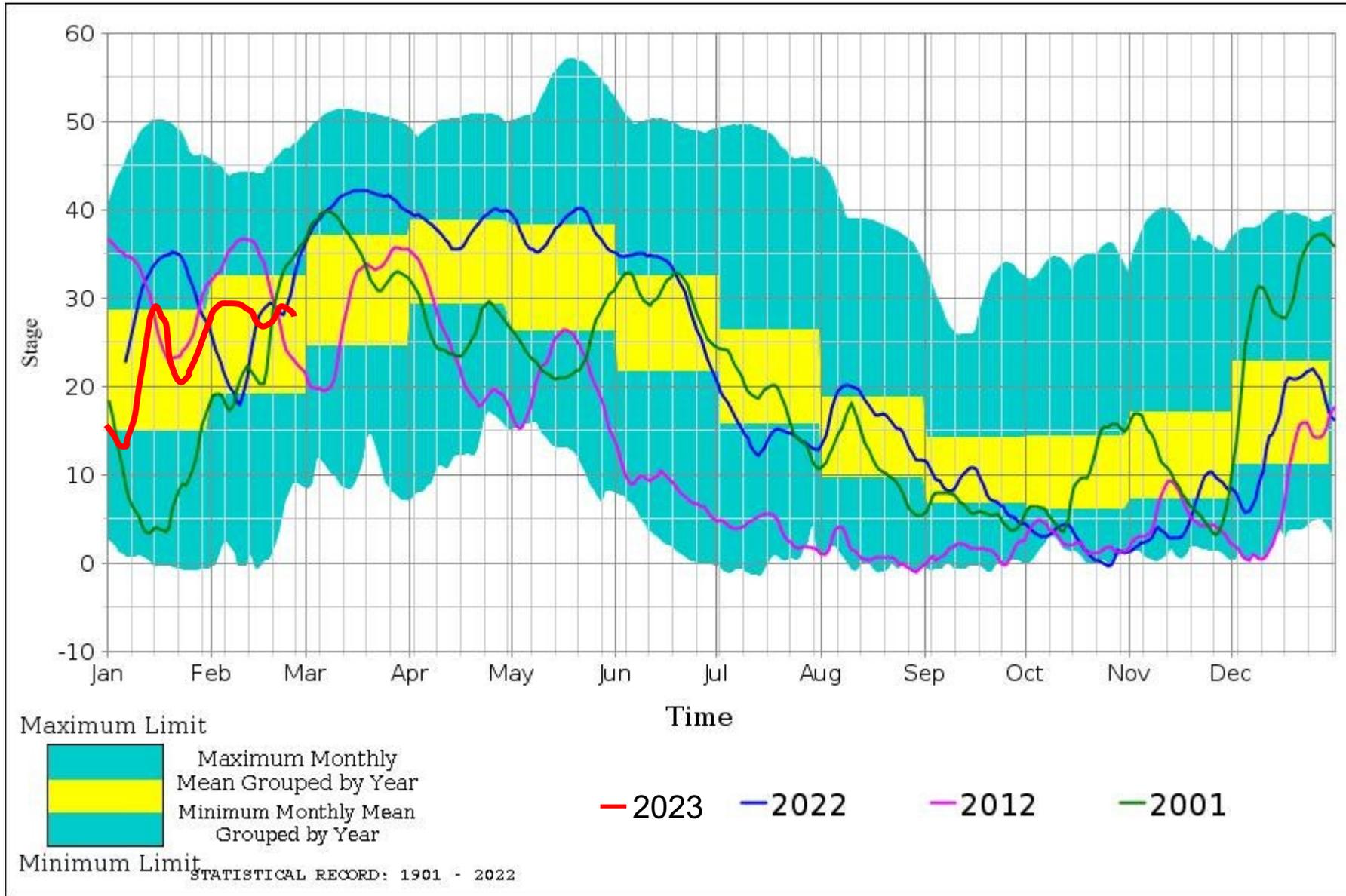


OHIO RIVER @ CAIRO, IL





MISSISSIPPI RIVER @ VICKSBURG, MS





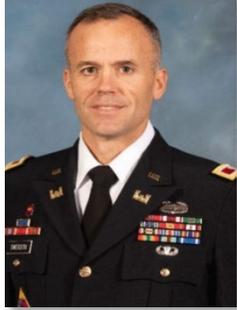
Mississippi Valley Division and Mississippi River Commission



MG Diana Holland
Commanding General, **MVD**
President, **MRC**



ST. PAUL
COL Eric Swenson



ROCK ISLAND
COL Jesse Curry



Hon. James Reeder
Civilian
2018



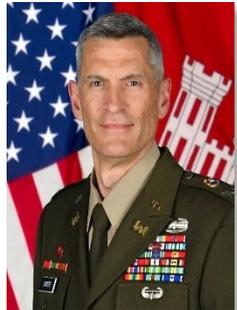
Hon. Riley James
Civilian
2020



ST. LOUIS
COL Kevin Golinghorst



MEMPHIS
COL Brian Sawser



Hon. Robert Miller, Ph. D.
Civilian
2022



RADM Ben Evans
NOAA



VICKSBURG
COL Christopher Klein



COL Andy Pannier
Deputy Commander, **MVD**
Secretary, **MRC**



BG Kimberly Peeples, LRD



BG Geoff Van Epps, NWD



MVD
Mr. Mark Wingate
(A) Director of
Regional Business



MVD
Mr. Jim Bodron
Director of
Programs

