

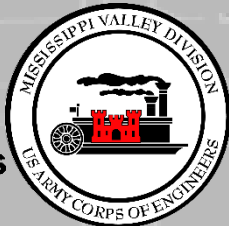
INLAND WATERWAYS USERS BOARD MEETING #99

Patrick Chambers
Chief, Operations & Regulatory
Mississippi Valley Division

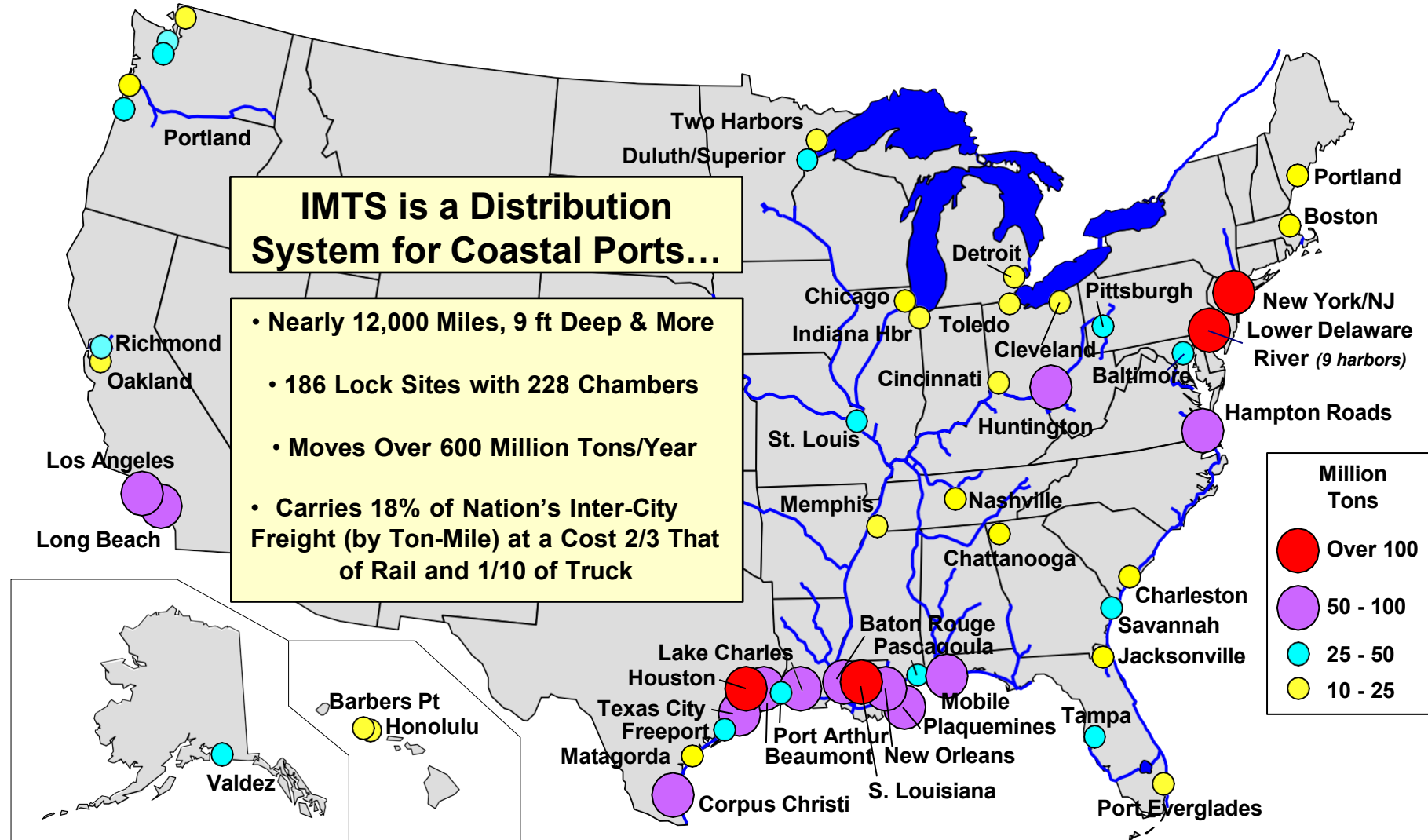
April 13, 2023



**US Army Corps
of Engineers®**

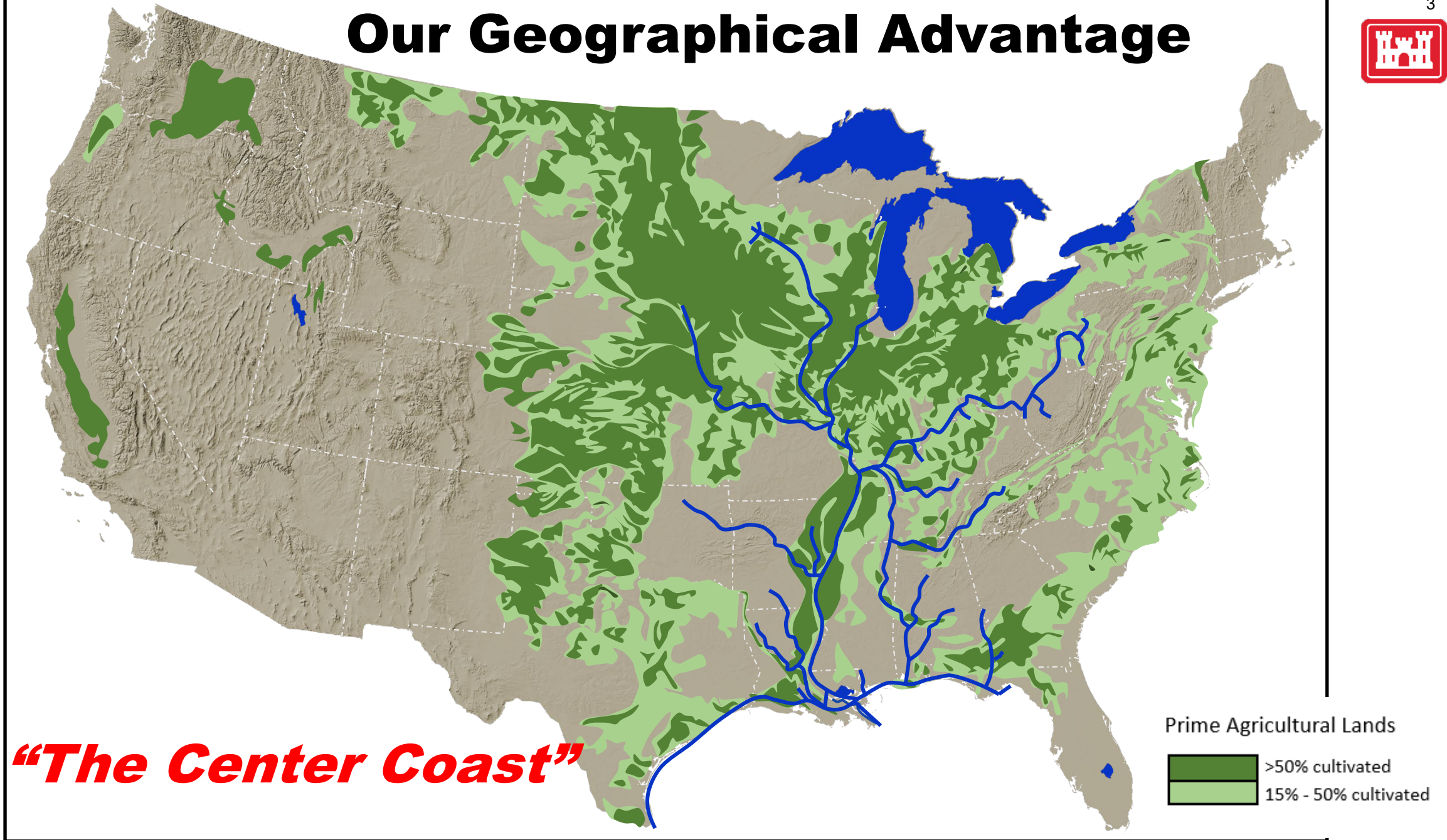


A Maritime Nation





Our Geographical Advantage



ENGINEERING A RESILIENT RIVER



Aerial view of chevrons on the MS River



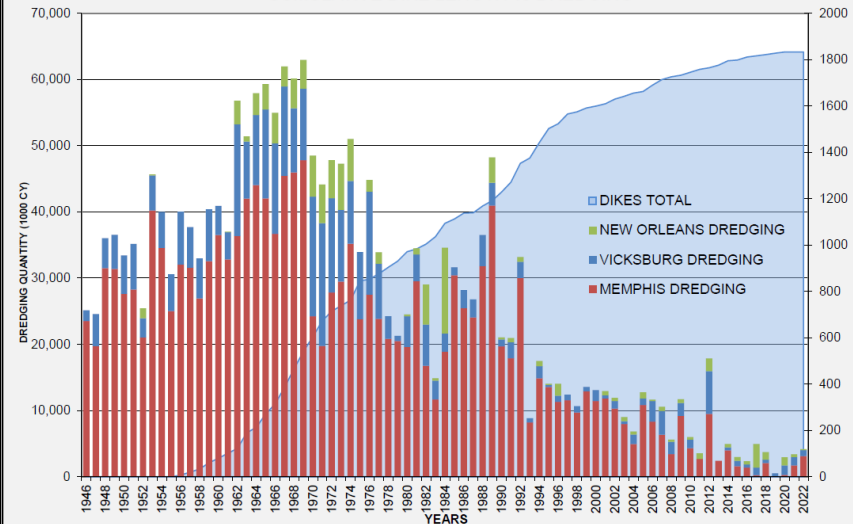
Rock Pinnacle removal at Thebes, IL



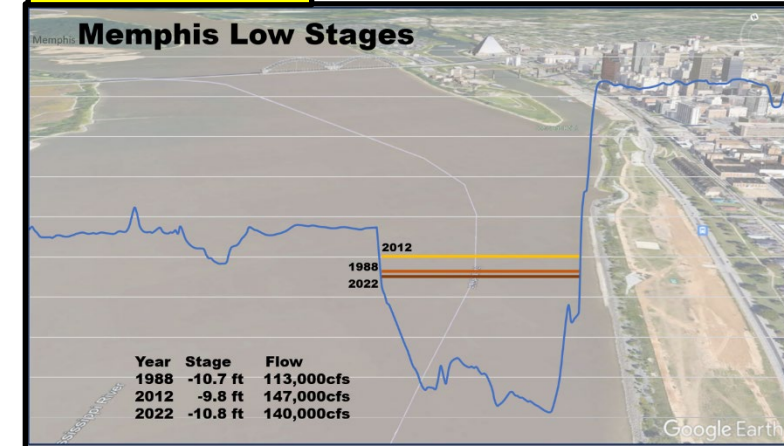
Dredging during drought facilitates NAV



MISSISSIPPI RIVER & TRIBUTARIES PROJECT
CUMULATIVE DIKE LENGTH vs DREDGING



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

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
**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.*



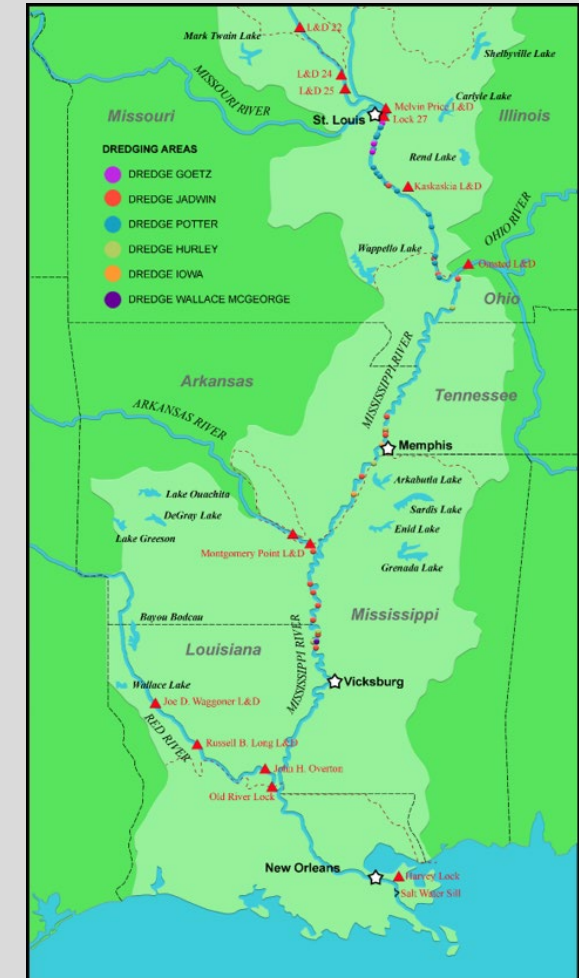
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2022 LOW WATER TIMELINE



- ❖ 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!!

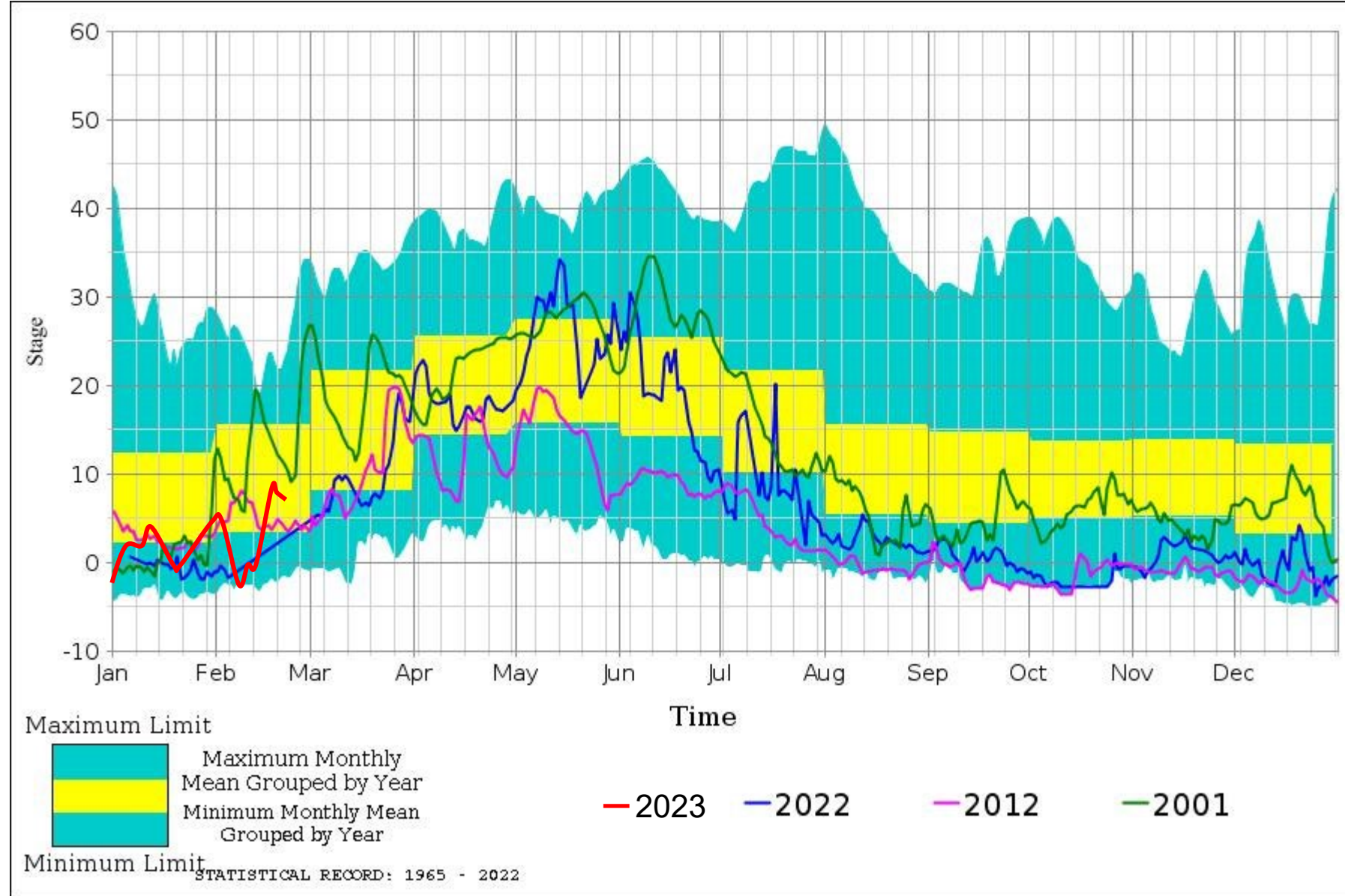


In Closing...





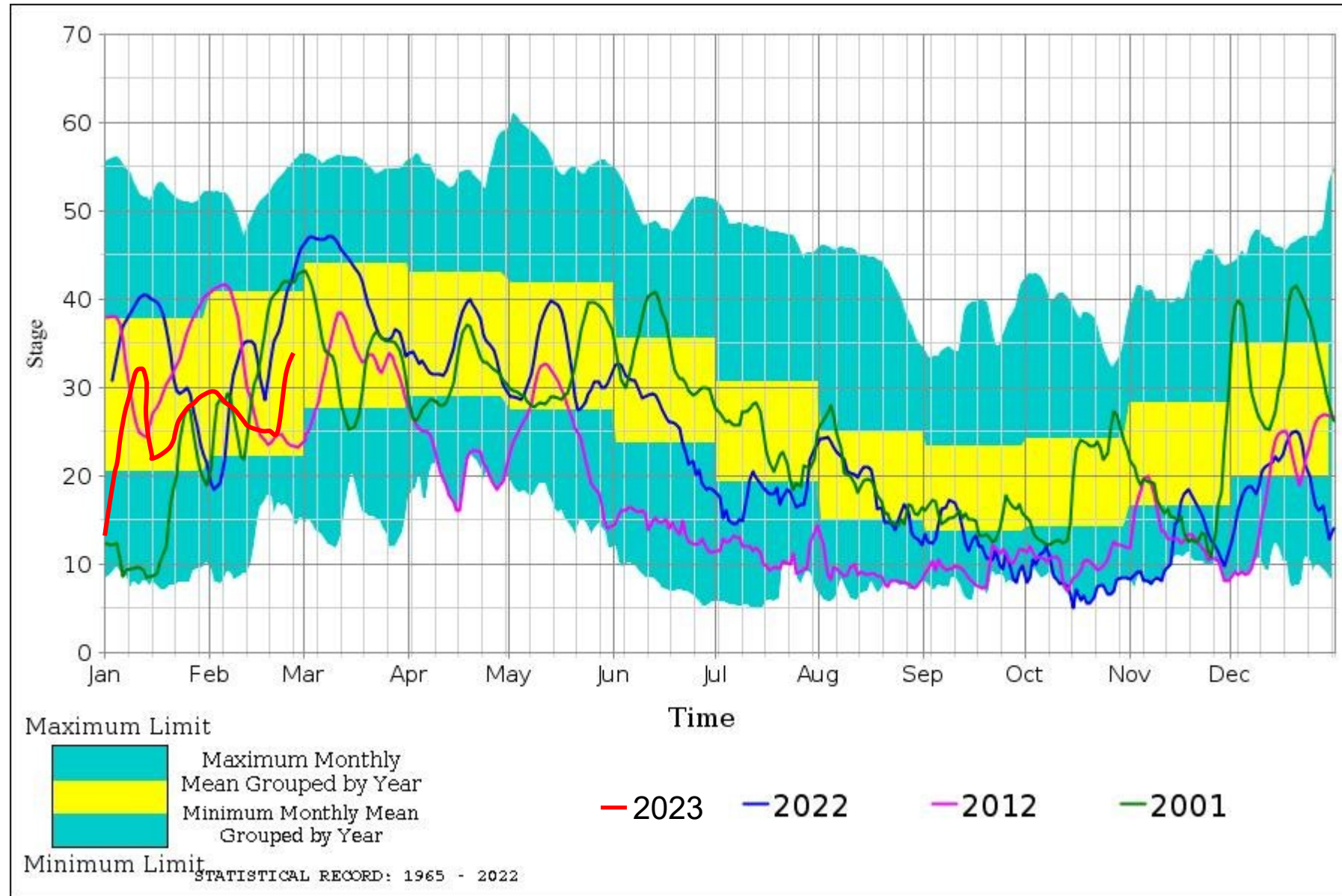
MISSISSIPPI RIVER @ ST. LOUIS, MO





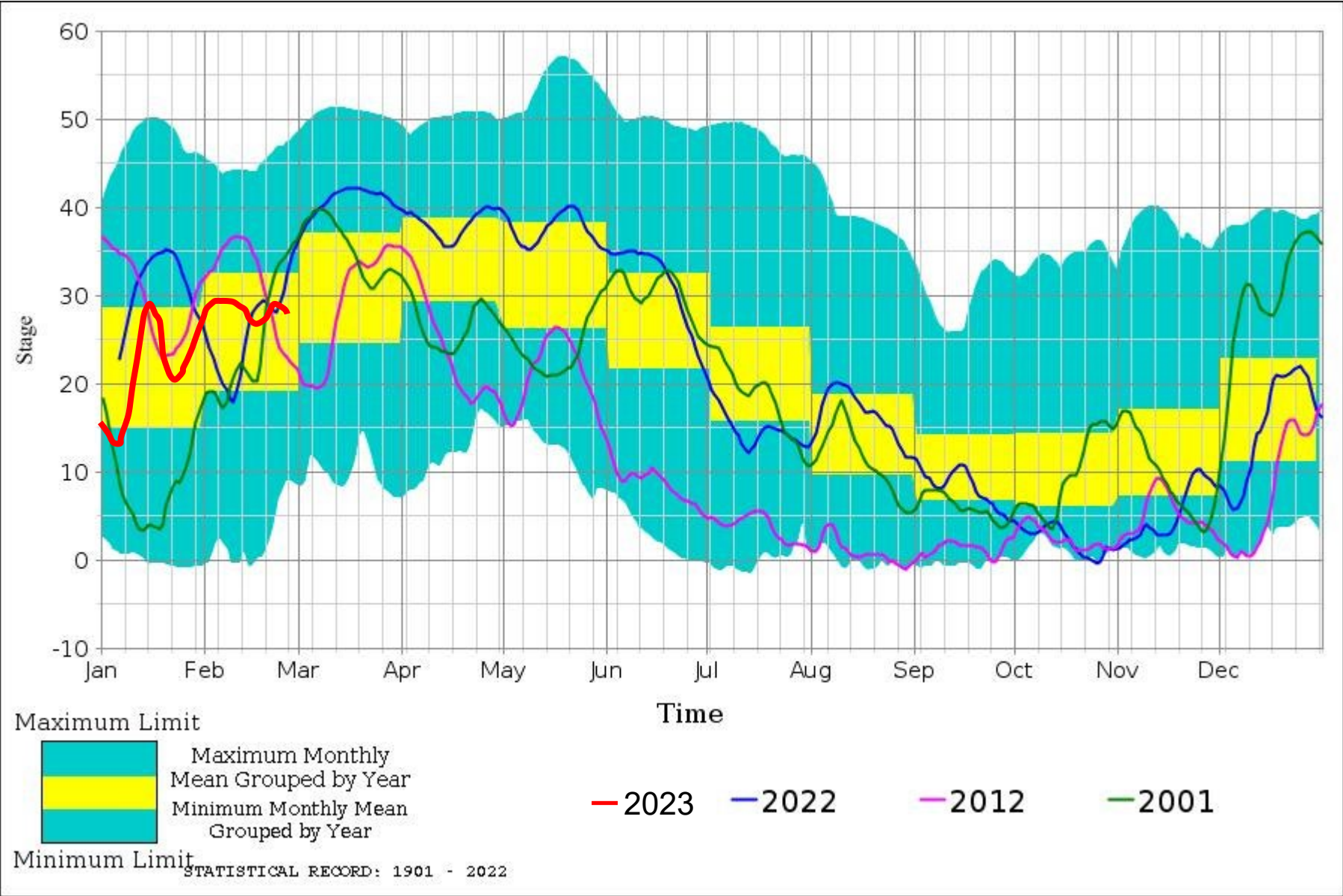
OHIO RIVER @ CAIRO, IL

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MISSISSIPPI RIVER @ VICKSBURG, MS



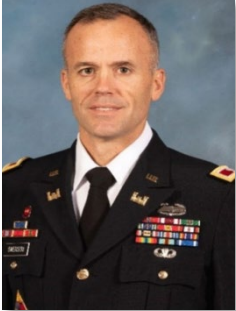


Mississippi Valley Division and Mississippi River Commission

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ST. PAUL
COL Eric
Swenson



ROCK ISLAND
COL Jesse
Curry



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



**Hon. James
Reeder**
Civilian
2018



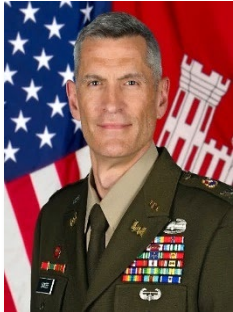
**Hon. Riley
James**
Civilian
2020



ST. LOUIS
COL Kevin
Golinghorst



MEMPHIS
COL Brian
Sawser



**Hon. Robert
Miller, Ph. D.**
Civilian
2022



**RADM
Ben Evans**
NOAA



VICKSBURG
COL
Christopher
Klein



NEW ORLEANS
COL Cullen
Jones



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

