

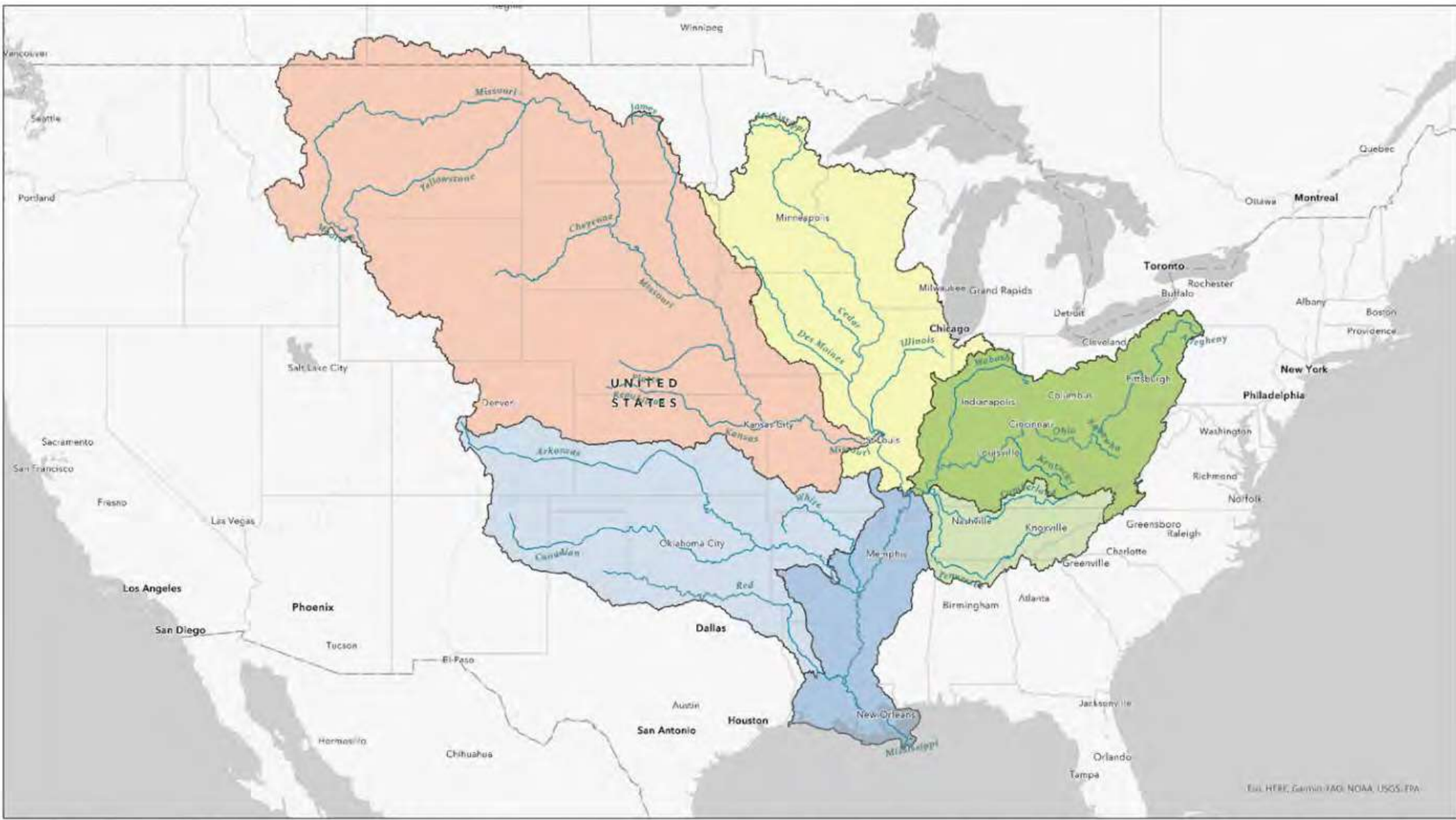
MISSISSIPPI RIVER SCIENCE FORUM

AQUATIC INVASIVE SPECIES

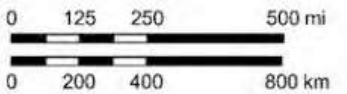
BRAD PARSONS

MICRA CHAIRMAN



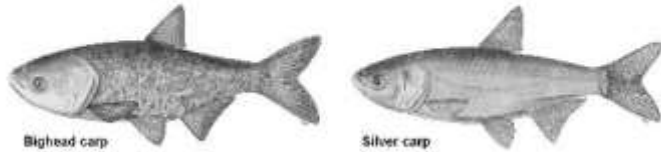


Esri, HERE, Garmin, IAGI, NOAA, USGS, EPA



- Mississippi River Sub-basins**
- Upper Mississippi
 - Missouri
 - Ohio
 - Lower Mississippi
 - Tennessee-Cumberland
 - Arkansas-Red-White





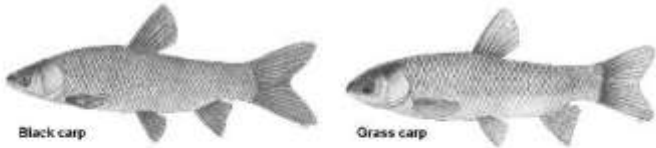
Bighead carp

Silver carp

Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States

Submitted to the Aquatic Nuisance Species Task Force
Prepared by the Asian Carp Working Group

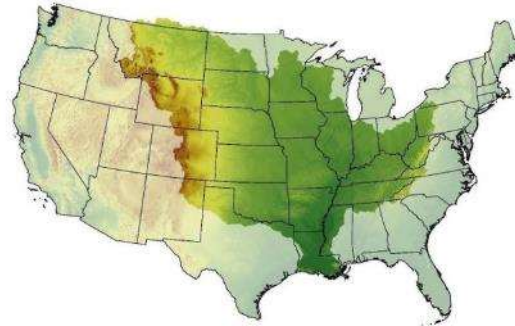
October 2007



Black carp

Grass carp

A JOINT STRATEGIC PLAN FOR MANAGEMENT OF MISSISSIPPI RIVER BASIN FISHERIES



Prepared by
Mississippi Interstate Cooperative Resource Association (MICRA)
February 2021

“Most Troublesome” AIS in the Basin

- Plants = 18
- Fish = 15
- Mollusks = 5
- Crustaceans = 4
- Microorganisms = 3
- Mammals = 1

Updated Recommendations for the Quagga and Zebra Mussel Action Plan for Western U.S. Waters

(QZAP 2.0)



Zebra mussels
(Dreissena polymorpha)

Quagga mussels
(Dreissena rostriformis bugensis)

September 29, 2020

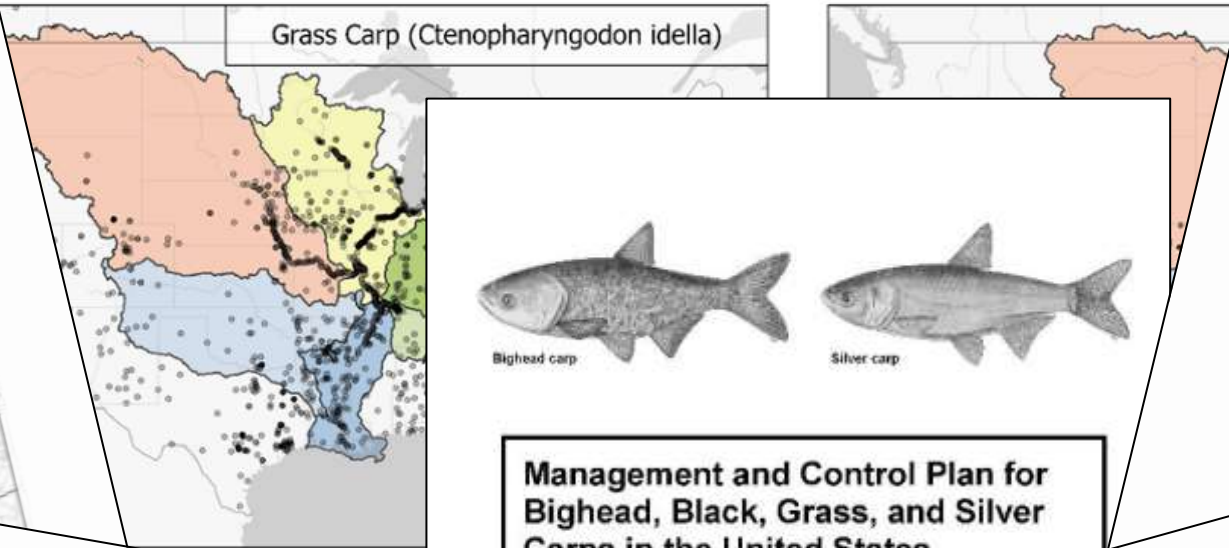


Ohio River Basin Asian Carp Control Strategy Framework

Ohio River Fisheries Management Team
October 24, 2014



Grass Carp (*Ctenopharyngodon idella*)



Bighead carp



Silver carp

Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States

Submitted to the Aquatic Nuisance Species Task Force
Prepared by the Asian Carp Working Group

Upper Mississippi River Basin Asian Carp Control Strategy Framework

Prepared by
Upper Mississippi River Asian Carp Partnership
August 3, 2018



Lower Mississippi River Basin Asian Carp Control Strategy Framework

August 2019



Missouri River Basin Asian Carp Control Strategy Framework

Prepared by
Missouri River Natural Resources Committee
Asian Carp Technical Committee
March 2018



USFWS and MICRA

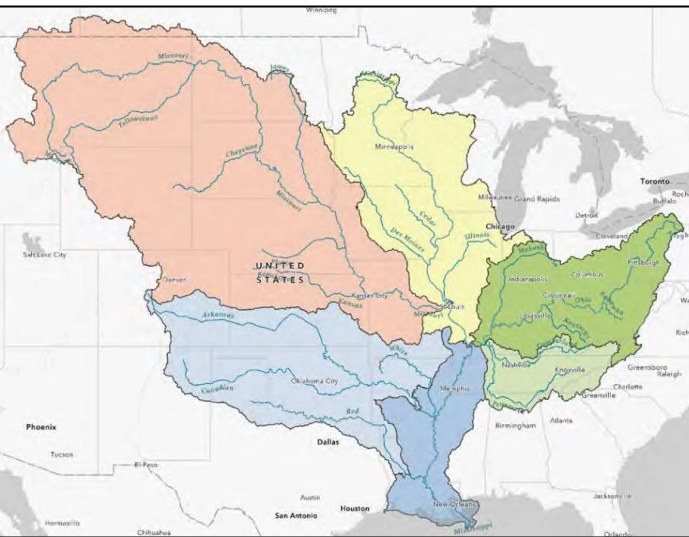
This map displays recent
invasive carps records.
<http://nas.er.usgs.gov>

Map image is the intellectual property of
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on map content.

of the Mississippi River.
ville, FL.





MICRA
Invasive Carp
Advisory
Committee

**Sub Basin Partnership
Representatives**

- Arkansas-Red-White River Basins
- Lower Mississippi River Basin
- Missouri River Basin
- Ohio River Basin
- Tennessee-Cumberland River Basins
- Upper Mississippi River Basin

Federal Agencies

- National Park Service
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

**Ohio River
Invasive Carp
Partnership**

- Illinois
- Indiana
- Kentucky
- Maryland (*invited*)
- New York (*invited*)
- North Carolina (*invited*)
- Ohio
- Pennsylvania
- West Virginia
- Virginia (*invited*)

- Non-Voting**
NPS (*invited*)
USACE
USFWS
USGS

**Tennessee
Cumberland
Rivers Invasive
Carp
Partnership**

- Alabama
- Kentucky
- Mississippi
- Tennessee

- Non-Voting**
NPS (*invited*)
TVA
USACE (*invited*)
USFWS
USGS

**Upper
Mississippi River
Invasive Carp
Partnership**

- Illinois
- Iowa
- Minnesota
- Missouri
- Wisconsin

- Non-Voting**
NPS
USACE
USFWS
USGS

**Lower
Mississippi River
Invasive Carp
Partnership**

- Arkansas
- Kentucky
- Louisiana
- Mississippi
- Missouri
- Tennessee

- Non-Voting**
NPS (*invited*)
USACE
USFWS
USGS

**Arkansas Red
White Rivers
Invasive Carp
Partnership**

- Arkansas
- Colorado (*invited*)
- Kansas
- Louisiana
- Missouri
- New Mexico
- Oklahoma
- Texas

- Non-Voting**
NPS
USACE
USFWS
USGS

**Missouri River
Invasive Carp
Partnership**

- Colorado
- Iowa
- Kansas
- Minnesota
- Missouri
- Montana (*invited*)
- Nebraska
- North Dakota
- South Dakota
- Wyoming (*invited*)

- Non-Voting**
USBR (*invited*)
NPS
USACE (*invited*)
USFWS
USGS



SCIENCE, KNOWLEDGE, AND DATA GAPS

--PREVENTION--

- ASSESSING RISK
 - HORIZON SCANNING FOR EMERGING AIS
 - RAPID RISK SCREENINGS TO PRIORITIZE
 - DETAILED RISK ASSESSMENTS
 - CLIMATE MAPPING TOOLS
- PATHWAY MANAGEMENT
 - INTERBASIN CONNECTIONS
 - ORGANISMS IN TRADE AND E-COMMERCE
 - SHIPPING AND BALLAST WATER
 - RECREATIONAL WATERCRAFT
 - DELIBERATE AND UNAUTHORIZED RELEASES
- EARLY DETECTION AND RAPID RESPONSE
 - EFFECTIVE DETECTION TOOLS
 - ROBUST SURVEILLANCE PROGRAMS
 - EFFECTIVE REMOVAL TOOLS / TECHNIQUES
 - DECISION SUPPORT TO UNDERSTAND LIKELIHOOD OF SUCCESS
 - REPORTING / INFORMATION SHARING
- CONTAINMENT
 - DETERRENT TECHNOLOGIES
 - UNDERSTANDING NATIVE SPECIES INTERACTIONS

SCIENCE, KNOWLEDGE, AND DATA GAPS

--MANAGEMENT AND CONTROL--

- UNDERSTANDING LIFE HISTORY AND BEHAVIOR TO INFORM CONTROL OPTIONS
- EFFECTIVE SAMPLING METHODOLOGIES TO CHARACTERIZE DISTRIBUTION AND ABUNDANCE, AND FOR CONDUCTING STOCK ASSESSMENTS: RECRUITMENT, GROWTH, AND MORTALITY
- DEVELOP EFFECTIVE CONTROL TOOLS / INTEGRATED PEST MANAGEMENT STRATEGIES
- DECISION SUPPORT TOOLS TO UNDERSTAND CONTROL OPTIONS AND INFORM CONTROL STRATEGIES
- COST-EFFECTIVE METHODOLOGIES FOR EVALUATING AIS RESPONSE TO CONTROL ACTIONS
- MONITORING TO UNDERSTAND AFFECTS OF AIS AND MANAGEMENT ACTIONS ON NATIVE FISHES

SCIENCE, KNOWLEDGE, AND DATA GAPS

--RESTORATION AND RESILIENCY--

- UNDERSTANDING IMPACTS ON NATIVE SPECIES
- RESTORE NATIVE SPECIES AND DIVERSE HABITATS
- UNDERSTANDING IMPACTS OF CLIMATE CHANGE ON NATIVE SPECIES AND AIS

--INFORMATION MANAGEMENT--

- CONSISTENT USE OF AIS REPORTING TOOLS
- DEVELOPMENT OF SHARED DATA STORAGE, MANAGEMENT, AND ANALYSIS TOOLS
- DEVELOPMENT OF DECISION SUPPORT TOOLS THAT ENABLE MANAGERS TO USE AVAILABLE DATA TO REDUCE UNCERTAINTY IN DECISION MAKING

RECOMMENDED NEXT STEPS / FUTURE DIRECTION

1. FEDERAL RECOGNITION AND SUPPORT FOR A MISSISSIPPI RIVER BASIN FISHERY COMMISSION
2. COORDINATED AND SUSTAINED FEDERAL INVESTMENTS TO PROVIDE FOR ENVIRONMENTAL RESTORATION AND RESILIENCY OF THE ENTIRE MISSISSIPPI RIVER BASIN
3. CONTINUED / INCREASED FEDERAL SUPPORT FOR IMPLEMENTATION OF ANS TASK FORCE APPROVED SPECIES MANAGEMENT PLANS AND STATE/INTERSTATE AIS MANAGEMENT PLANS
4. FEDERAL LEGISLATION TO STRENGTHEN THE LACEY ACT BY PROHIBITING INTERSTATE TRANSPORT OF SPECIES LISTED AS INJURIOUS WILDLIFE

RECOMMENDED NEXT STEPS / FUTURE DIRECTION

5. INITIATE THE SCOPING PHASE FOR A FEASIBILITY STUDY TO PREVENT TWO-WAY TRANSFER OF AIS FROM THE GREAT LAKES TO THE MISSISSIPPI RIVER BASIN VIA THE CHICAGO AREA WATERWAYS SYSTEM
6. CONSTRUCTION OF INVASIVE CARP DETERRENT BARRIER PILOT PROJECTS AT HIGHEST PRIORITY LOCATIONS IN THE TENNESSEE AND CUMBERLAND RIVERS
 - 25% NON-FEDERAL COST SHARE MAY LIMIT ABILITY TO IMPLEMENT DETERRENTS PROJECTS
 - OPERATION AND MAINTENANCE OF PILOT PROJECTS WILL IMPACT OPERATION AND MAINTENANCE OF EXISTING U.S. ARMY CORPS OF ENGINEERS' INFRASTRUCTURE

RECOMMENDED NEXT STEPS / FUTURE DIRECTION

7. ENGAGE ADDITIONAL FEDERAL AGENCIES AND PROGRAMS TO FACILITATE INCREASED REMOVAL AND SCALABLE UTILIZATION OF INVASIVE CARP
8. FEDERAL INVESTMENTS TO SUPPORT BASINWIDE LONG TERM RESOURCE MONITORING PROGRAMS MODELED ON THE EXISTING PROGRAM IN THE UPPER MISSISSIPPI RIVER
9. FEDERAL SUPPORT AND INVESTMENTS TO ADDRESS ORGANISMS-IN-TRADE BY MODERNIZING NATIONAL BIOSECURITY AND IMPLEMENTING REGULATORY AND MONITORING STRATEGIES FOR INTERNET SALES / E-COMMERCE OF AQUATIC INVASIVE SPECIES

RECOMMENDED NEXT STEPS / FUTURE DIRECTION

10. DEVELOP AND UTILIZE COORDINATED COMMUNICATIONS STRATEGIES TO IMPROVE AWARENESS AND UNDERSTANDING AMONG DECISION MAKERS, STAKEHOLDERS, AND THE GENERAL PUBLIC TO PROVIDE INCREASED SCIENCE AND SUPPORT FOR COLLABORATIVE EFFORTS TO RESTORE THE MISSISSIPPI RIVER BASIN AND PROTECT IT AS A HEALTHY WORKING RIVER

THANK YOU

EMAIL: MICRA@MICRARIVERS.ORG

WEBSITE: MICRARIVERS.ORG

