

#### Invasive Carp: Cooperative Efforts for Management and Control





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Conover, G., R. Simmonds, and M. Whalen, editors. 2007. Management and control plan for bighead, black, grass, and silver carps in the United States. Asian Carp Working Group, Aquatic Nuisance Species Task Force, Washington, D.C. 223 pp.







#### http://micrarivers.org/









U.S. FISH AND WILDLIFE SERVICE

#### U.S. Fish & Wildlife Service









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



#### Ohio River Basin Asian Carp Control Strategy Framework

Ohio River Fisheries Management Team October 24, 2014



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#### Ohio River Basin Project Funding Overview

OHIO RIVER BASIN	S	9,019,996	7 PROJECTS
Agency	Funding Amount Project Title		
Agency IN / DNR KY / KDFWR PA / PFBC IL / DNR WV / DNR TOTAL PROJECT FUNDING WV / DNR IN / DNR	s s s s s s s	210,000 218,750 65,000 96,923 126,250 716,923 3,000 217,000	
KY / KDFWR TOTAL PROJECT FUNDING	\$ \$	78,750 298,750	2. Abundance and Distribution of early life stages of Asian carp in the Ohio River
KY / KDFWR INDNR IL / DNR WV / DNR TOTAL PROJECT FUNDING	\$ \$ \$ \$	773,000 633,278 1,129,052 7,500 2,542,830	<ol> <li>Control and Containment of Asian carp in the Ohio River</li> <li>Control and Containment of Asian carp in the Ohio River</li> <li>Control and Containment of Asian carp in the Ohio River</li> <li>Control and Containment of Asian carp in the Ohio River</li> </ol>
TN / TWRA / TTU TOTAL PROJECT FUNDING	s \$	116,510 116,510	4. Relative Population Densities and Movement of Asian Carp in the Tennessee and Cumberland Rivers, Tributaries of the Ohio River
TN/TWRA / TTU KY/KDFWR TOTAL PROJECT FUNDING	\$ \$	323,000 738,000 1,061.000	<ol> <li>Deterrent Planning for Asian Carp in the Ohio River Basin</li> <li>Deterrent Planning for Asian Carp in the Ohio River Basin</li> </ol>
KY / KDFWR IN / DNR IL / DNR WV / DNR TOTAL PROJECT FUNDING	\$ \$ \$ \$	122,500 300,000 452,858 9,000 884,358	<ul> <li>6. Quantifying lock and dam passage, habitat use, and survival rates of Asian carp in the Ohio River</li> <li>6. Quantifying lock and dam passage, habitat use, and survival rates of Asian carp in the Ohio River</li> <li>6. Quantifying lock and dam passage, habitat use, and survival rates of Asian carp in the Ohio River</li> <li>6. Quantifying lock and dam passage, habitat use, and survival rates of Asian carp in the Ohio River</li> <li>6. Quantifying lock and dam passage, habitat use, and survival rates of Asian carp in the Ohio River</li> </ul>
KY / KDFWR TN/TWRA / TTU AL/ AWLFF TOTAL PROJECT FUNDING	\$ \$ \$	1,997,125 1,182,500 220,000 3,399,625	<ol> <li>Evaluation and Removal of Asian Carp in the Tennessee and Cumberland River Basins</li> <li>Evaluation and Removal of Asian Carp in the Tennessee and Cumberland River Basins</li> <li>Evaluation and Removal of Asian Carp in the Tennessee and Cumberland River Basins</li> </ol>

FY2020 Ohio River Basin Asian Carp Project Proposals and Funding Table







# U.S. Fish & Wildlife Service Funding for Invasive Carp National Plan Implementation





## **Key Legislation**

- Water Resources Reform & Development Act of 2014
- Further Consolidated Appropriations Act, 2020 (Public Law 116-94)
- Water Resources Development Act of 2020











#### DETERRENTS

- ELECTRIC BARRIER •
- ACOUSTIC
- CO2  $\bullet$
- BAFF •









#### ELECTRIC DISPERSAL BARRIER: Chicago Area Waterway System (CAWS)













WILDLIFE SERVICE

#### U.S. Fish & Wildlife Service

#### ACOUSTIC DETERRENT SYSTEM: Mississippi River Lock and Dam 19 Field Study





4'-9.5"



#### CARBON DIOXIDE:



Pressurized injection mixer



#### Water treatment process





**Option 1** Side/horizontal injection

**Option 2** Bottom injection





#### **BIOACOUSTIC FISH FENCE (BAFF):**











## Mississippi Department of Wildlife, Fisheries and Parks

#### **Pickwick Lake**

• Sportfish community electroshocking and creel surveys every 2 years

#### **Bay Springs**

Sportfish community electroshocking and creel surveys every 2 years

#### Tennessee-Tombigbee Waterway

 Sportfish community electroshocking in 2 pools annually (1 lock pool & 1 river lake: Aberdeen, Aliceville, Columbus)







## Mississippi Department of Wildlife, Fisheries and Parks

Maintain Telemetry Array – Movement Study 5 Receivers Pickwick: Goat Island, JP Coleman, Eastport Bay Springs: Crow's Neck Jamie Whitten Lock











## **Assessment Activities**

VanderBloemen et al. 2022

- Mississippi State University and MDWFP
  - Gill netting survey
    - No invasive carp captured in Yellow Creek (Pickwick Lake)
    - Three Silver Carp documented in Bay Springs

#### Early Detection and Rapid Removal Survey

- USFWS LMRFWCO and MDWFP
- Multi-gear sampling two pools below leading-edge (Bay Springs Lake)
- Baseline community data and remove early invaders
- Future efforts:
  - Long-term gill netting survey in Bay Springs
  - Sample all MS pools of Tennessee–Tombigbee Waterway



<u>References:</u> VanderBloemen, Spencer N. "The invasion of bigheaded carps in the Tennessee River and Tennessee – Tombigbee Waterway" (2022). *Theses and Dissertations*. 5452. <u>https://scholarsjunction.msstate.edu/td/5452</u>



Downstream of Bay Springs:

2021 – Angler report (unconfirmed) in Montgomery Pool

2022 – Sighting (unconfirmed) in Aberdeen Lake

2022 – Dead Silver Carp in Montgomery Pool











## **Report Sightings**

- Photo and/or specimen
- Location information

# Mississippi Department of Wildlife, Fisheries and Parks:

601-432-2200



Alabama Department of Conservation and Natural Resources: 251-331-7050

Asiancarp@dcnr.alabama.gov



















## https://www.fws.gov/story/invasive-carp-southeastern-waters https://invasivecarp.us/

### http://www.micrarivers.org/

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## **INVASIVE CARP**



The Corps of Engineers has been involved with carp in the MS River and Great Lakes for several years.

□ The Nashville District was **authorized in WRDA 20** under the "Asian carp Prevention and Control **Pilot Program**".

#### □ Specifically:

- □ ".. in conjunction with the Tennessee Valley Authority and other relevant Federal agencies.."
- □ ".. carry out projects to manage and prevent the spread of Asian carp.."
- ".. carried out in a river system or reservoir in the Cumberland River Watershed or Tennessee River Watershed.."
- □ ".. select **not more than 10** projects to carry out under the pilot program."



## INVASIVE CARP HOW?



- "The Federal share of the costs of a project carried out under the program may not exceed 75 percent of the total costs of the project."
- "...the Federal share of the costs for operation, maintenance, rehabilitation, and repair of the project shall be **100 percent**."
- "..projects carried out in reservoirs owned or managed by the Tennessee Valley Authority, the Secretary and the Tennessee Valley Authority shall
   execute a memorandum of agreement
- "There is authorized to be appropriated to carry out this subsection \$25,000,000,.."



#### **TENNESSEE TOMBIGBE WATERWAY**



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- The project provides for a 233.7-mile navigation channel from Demopolis, Ala. to the Tennessee River.
- The Waterway consists of three distinct sections:
  - 149.3 mile River Section (a 9-by 300-foot channel, 4 locks and dams) Demopolis, AL to Amory, MS.
  - 45.6 mile Canal Section (a 12-by 300-foot channel and 5 locks) Amory to Jamie Whitten Lock and Dam
  - 38.8-mile Divide Cut Section (a 12by 280-foot channel) Jamie Whitten Lock and Dam to the Tenn River
- Total lift of 341 feet is accomplished by 10 locks.
- Existing project authorized by the River & Harbor Act of 24 July 1946 (H. Doc.486, 79th Cong., 2nd Sess).
- Construction officially began 12 December 1972 and was opened for navigation in January 1985.

#### Working Today to Build a Better Tomorrow



#### Whitten Lock and Dam



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Working Today to Build a Better Tomorrow

# Invasive Carp in the Tennessee Valley

Aaron Coons August 11, 2022

> TENNESSEE VALLEY AUTHORITY

## Outline

#### **TVA Responsibilities**

#### **TVA Actions**





## Who Is Responsible?

TVA manages water/operates dams

States manage fisheries

**USFWS obtains funding & facilitates program** 

**USACE** operates locks



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## **TVA Actions**

#### **Programmatic Environmental Assessment**

**River Operations** 

**Environmental Monitoring** 



![](_page_26_Picture_5.jpeg)

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![](_page_27_Figure_1.jpeg)

![](_page_27_Picture_2.jpeg)

![](_page_28_Figure_1.jpeg)

![](_page_28_Picture_2.jpeg)

![](_page_29_Figure_1.jpeg)

![](_page_29_Picture_2.jpeg)

![](_page_30_Figure_1.jpeg)

![](_page_30_Picture_2.jpeg)

## Importance

![](_page_31_Picture_1.jpeg)

#### **Sport Fishing**

#### **Biodiversity**

![](_page_31_Picture_4.jpeg)

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