

Aquatic Barrier System for the Tennessee-Tombigbee Waterway in Alabama and Mississippi: April 2023 Update

Jim Williams, Research Associate
Florida Museum of Natural History
Gainesville, Florida

Tennessee-Tombigbee Waterway

History

1971 - First construction

1985 - Waterway opened

Statistics

- 234 miles long
- 10 locks and dams
- 9–12 ft deep, 300 ft wide
- Locks 600 ft long x 110 ft wide
- Lock depth (lift) 25–84 ft
- Tow size 8 barges/lockage



Water Resources Development Act 2022

INCLUDED AUTHORIZATION OF
FEASIBILITY STUDIES FOR

TENNESSEE-TOMBIGBEE RIVER BASINS,
TENNESSEE.

Project to deter, impede, or restrict the
dispersal of aquatic nuisance species in
the Tennessee-Tombigbee Basins.

117TH CONGRESS } 2d Session	HOUSE OF REPRESENTATIVES	{ REPORT 117-347
--------------------------------	--------------------------	---------------------

WATER RESOURCES DEVELOPMENT ACT OF 2022

JUNE 7, 2022.—Committed to the Committee of the Whole House on the State of
the Union and ordered to be printed

Mr. DEFazio, from the Committee on Transportation and
Infrastructure, submitted the following

R E P O R T

[To accompany H.R. 7776]

Foreign Nonindigenous Fishes

Family Xenocypridae: Sharpbellies

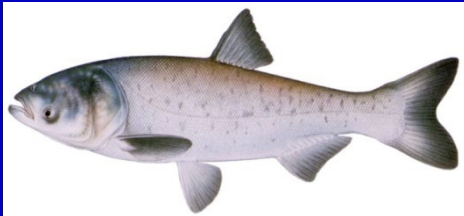
Silver Carp, *Hypophthalmichthys molitrix*

2023 0 to -3 RM from Bay Springs Lock



Bighead Carp, *Hypophthalmichthys nobilis*

2023 ~40 RM from Bay Springs Lock



Black Carp, *Mylopharyngodon piceus*

2023 ~150 RM from Bay Springs Lock



Family Gobiidae: Gobies

Round Goby, *Neogobius melanostomus*

2023 ~500 RM from Bay Springs Lock



Family Channidae: Snakeheads

Northern Snakehead, *Channa argus*

2023 ~600 RM from Bay Springs Lock

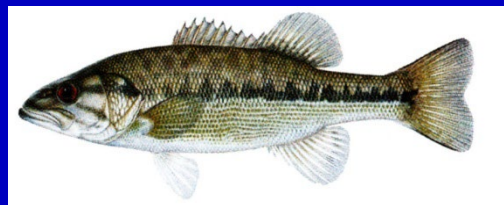


Native Aquatic Species Invasions via the Tenn-Tom Waterway

Any native aquatic species occurring in either Tennessee River basin or Tombigbee River basin, but not both sides of the drainage divide, have the potential to negatively impact native species and/or their environments.

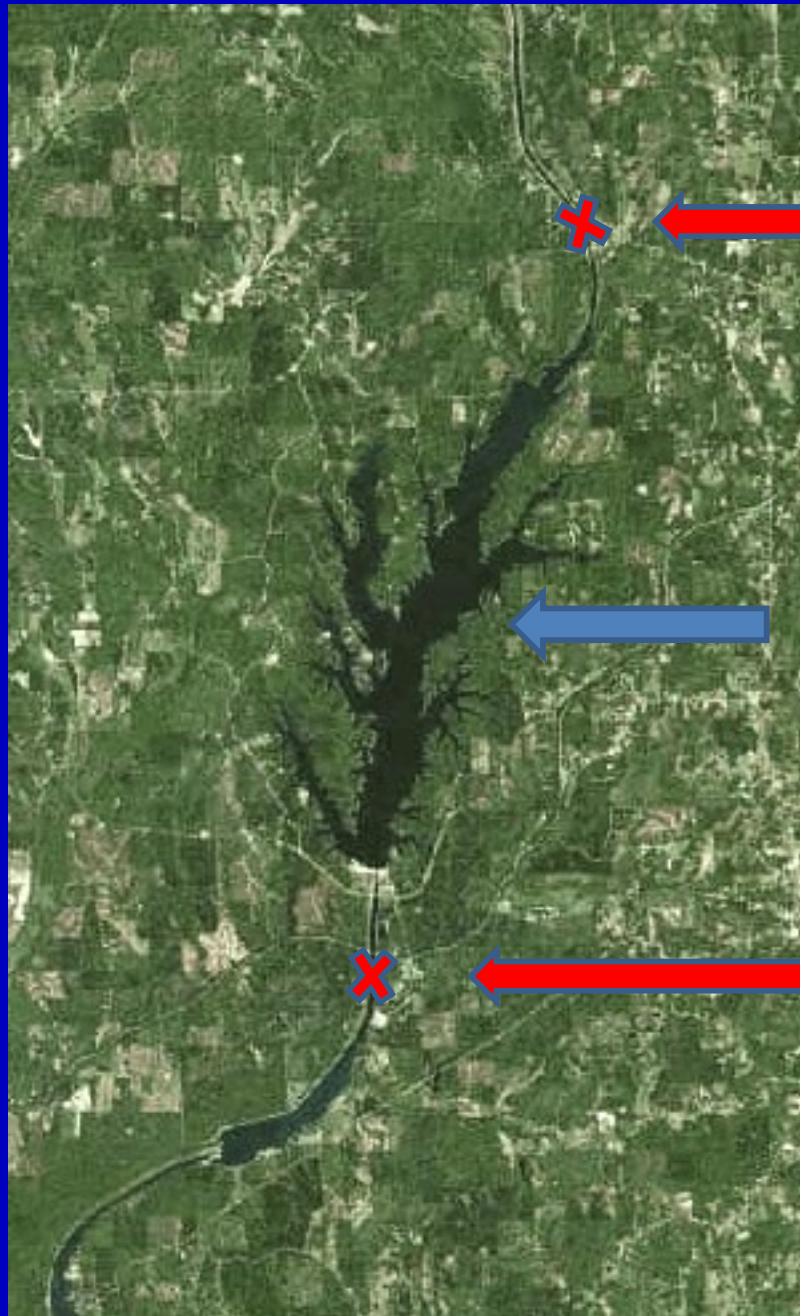
Possible outcomes include hybridization, competitive displacement, alteration of predator-prey relationships (see - Extinction by Hybridization and Introgression by Rhymer & Simberloff, 1996).

While threats from crossing the divide may appear subtle, they have the potential to significantly impact biodiversity on both sides of the divide.



Feasibility Study for Barrier on Tenn-Tom Waterway

- Lead agency for study is the Nashville District, US Army Corps of Engineers.
- Assembled the “Decision Analysis Team”.
- Team members include state and federal agency partners.
- At present they are looking only at a barrier at the Bay Springs dam/lock site.
- Currently considering options for type and placement of barrier structure.
- Examining single deterrent barrier (e.g., acoustic, bubble system, or electric).
- Also examining multi-deterrent barrier (e.g., BAFF system).
- Report due July 2023



Electric Barrier

Tenn-Tom Waterway
Bay Springs Reservoir

Electric Barrier

Sonny Montgomery Lock and Dam

Bay Springs – 84 ft lift

Volume

5.5 million cubic feet

41.4 million gallons

127 acre feet

Tenn-Tom Waterway

Sonny Montgomery

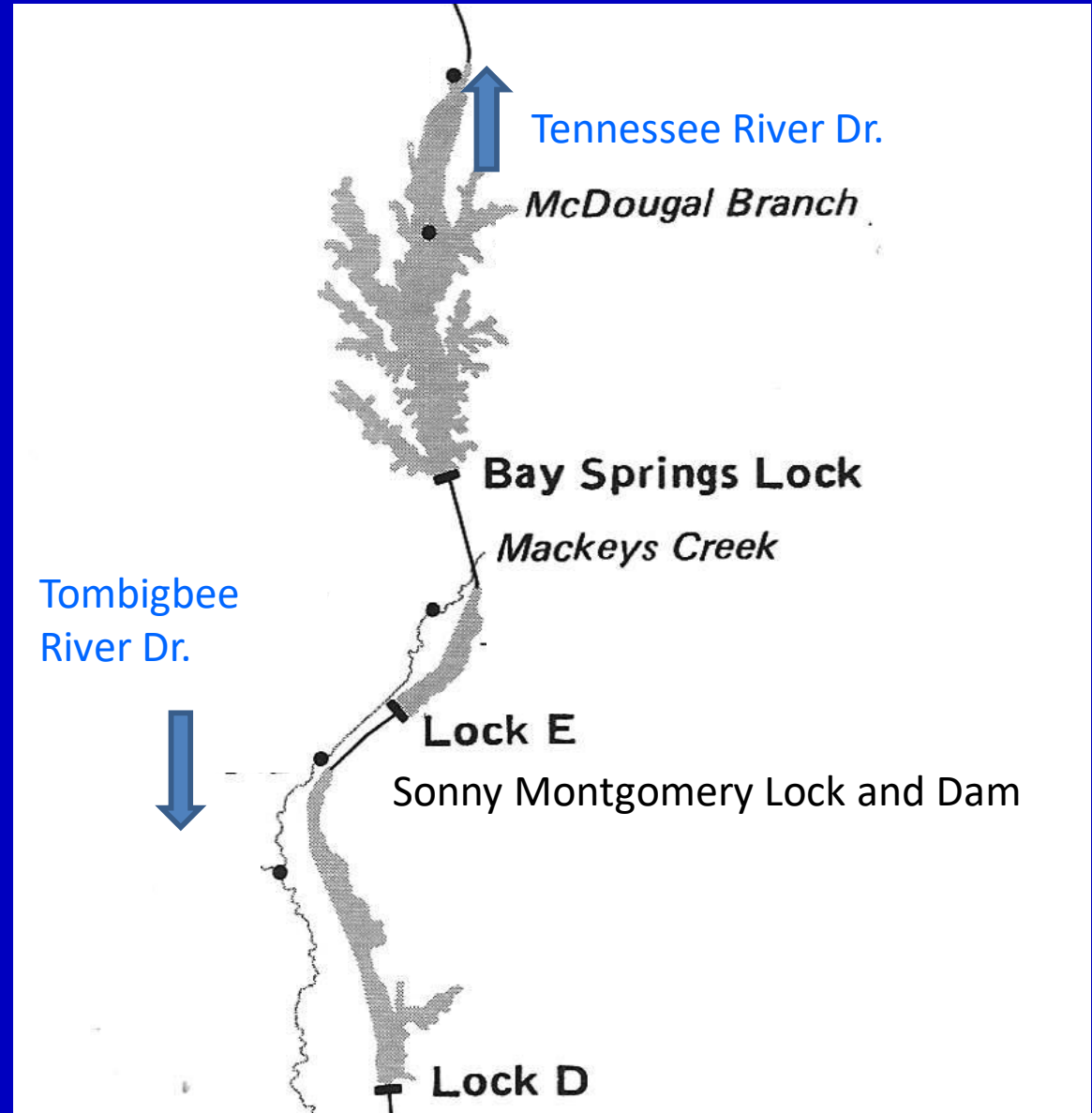
Lock (Lock E) – 30 ft lift

Lock E Volume

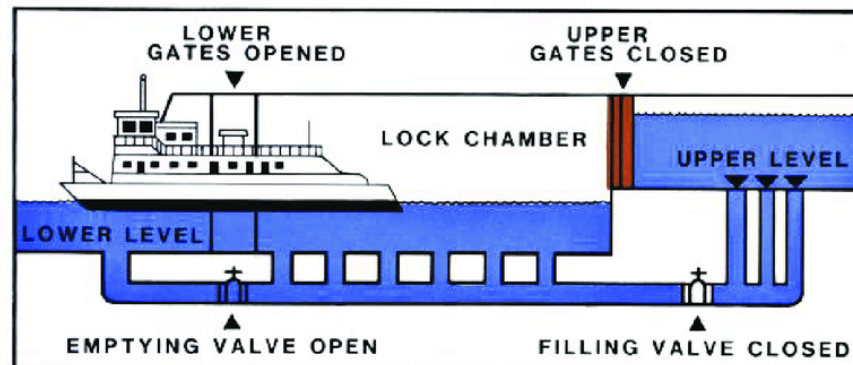
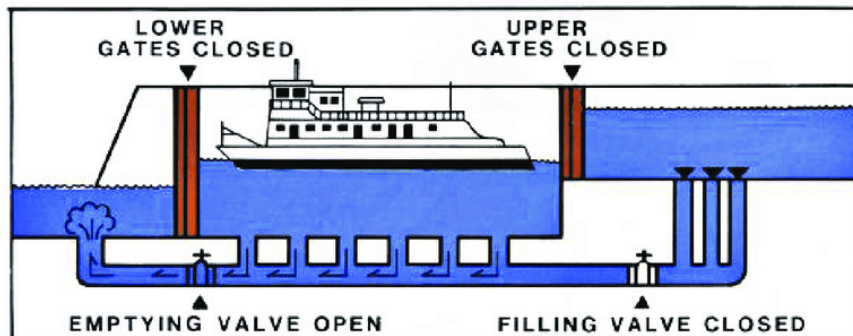
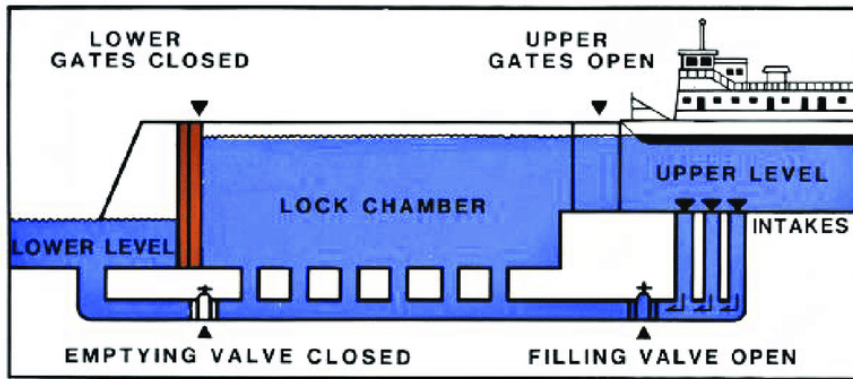
1.9 million cubic feet

14.8 million gallons

46 acre feet

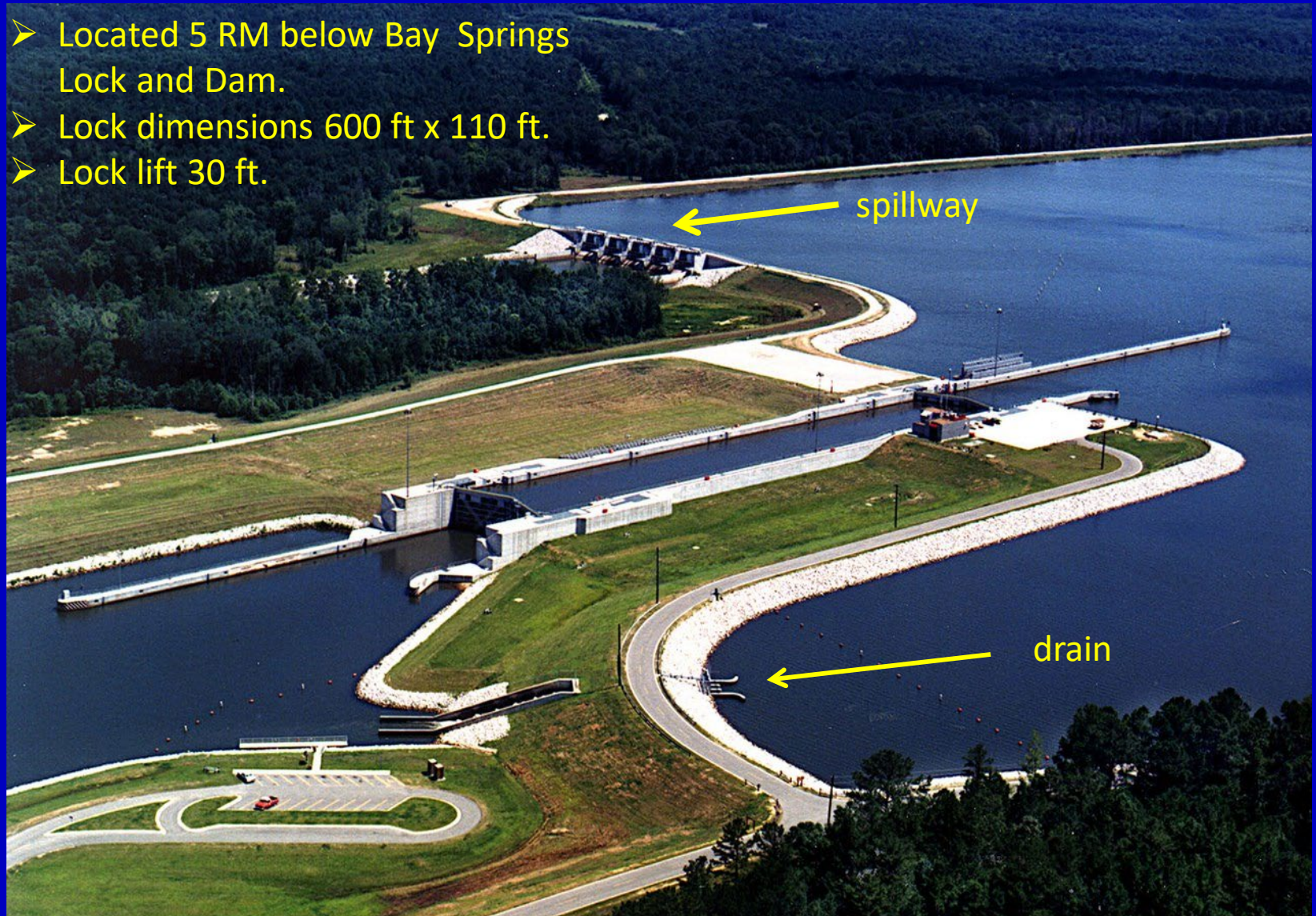


Standard Lock Operation



Sonny Montgomery Lock and Dam

- Located 5 RM below Bay Springs Lock and Dam.
- Lock dimensions 600 ft x 110 ft.
- Lock lift 30 ft.



Sonny Montgomery Lock and Dam Pool



Questions??

