

USACE Natural Resource Management

Freshwater Mussels



Gulf Moccasinshell & Alabama Moccasinshell

Gulf Moccasinshell (*Medionidus penicillatus*): This is a small mussel that can grow up to 2.2 inches in length. The shell shape may be elongated, elliptical, or rhomboidal. The shell is fairly inflated and has relatively thin valves. The ventral margin may be almost straight, or have a slight rounding to it. The posterior ridge may be rounded or slightly angled. At the base line, the posterior ridge intersects the end of the shell. Females are somewhat more inflated than males. (USFWS)

Status: Endangered, listed 1998

Nature Serve: Imperiled

Alabama Moccasinshell (*Medionidus acutissimus*): The shell of this mussel is thin and elliptical in shape. The outer shell may be yellow to brownish yellow and has broken green rays. The nacre is thin, salmon colored in the umbos, and translucent along the edges. These mussels have a well-developed posterior ridge which ends in a point along the posterior ventral margin. The posterior slope is finely corrugated. (USFWS)

Status: Threatened, listed 1993

Nature Serve: Imperiled

G2

Imperiled

G2

Imperiled

Genus: *Medionidus* is a genus of freshwater mussels in the family *Unionidae*. A total of six species are assigned to this genus. All members of the genus are endemic to the southeastern United States of America and are considered to be vulnerable or imperiled. (NatureServe)

Photos Left to Right: Gulf moccasinshell outer shell (USFWS), Gulf moccasinshell inner shell (Georgia DNR- Wildlife Resources), & Alabama moccasinshell (USFWS)

Management and Protection:

- In September 2020, the USFWS released a 5-Year Review which noted that while the effects of climate change are uncertain within the range of the Gulf moccasinshell, the potential impacts are considered a threat to the viability of this species. (USFWS)
- In 2014, host fish trials were performed by Fritts and Bringolf. In these trials four potential darter species demonstrated successful transformation of Gulf moccasinshell larvae under laboratory conditions. (USFWS)
- Historically the Gulf moccasinshell was found in 11 sub-basins. Since its listing, these populations have continued to decline. (USFWS)
- USFWS's 2019 amendment to the Alabama moccasinshell's Recovery Plan noted that the species was still threatened by habitat modification, sedimentation, degradation of water quality, impoundment by dams, mining, point and nonpoint discharges, and predation that disproportionately impacts small populations.
 - New populations of the Alabama moccasinshell have been discovered since its listing, however they are small and localized. (USFWS)



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USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over \$55,000 on efforts related to the Gulf moccasinshell and Alabama moccasinshell. Costs for these listed species have been incurred by multiple business lines including Planning and Program Management, Regulatory, and Operations. Expense types include Site Visits and Inspections, Research, and Survey, Inventory, and Monitoring.



Gulf Moccasinshell = \$32,411 (2006)



Alabama Moccasinshell = \$23,389 (2005)

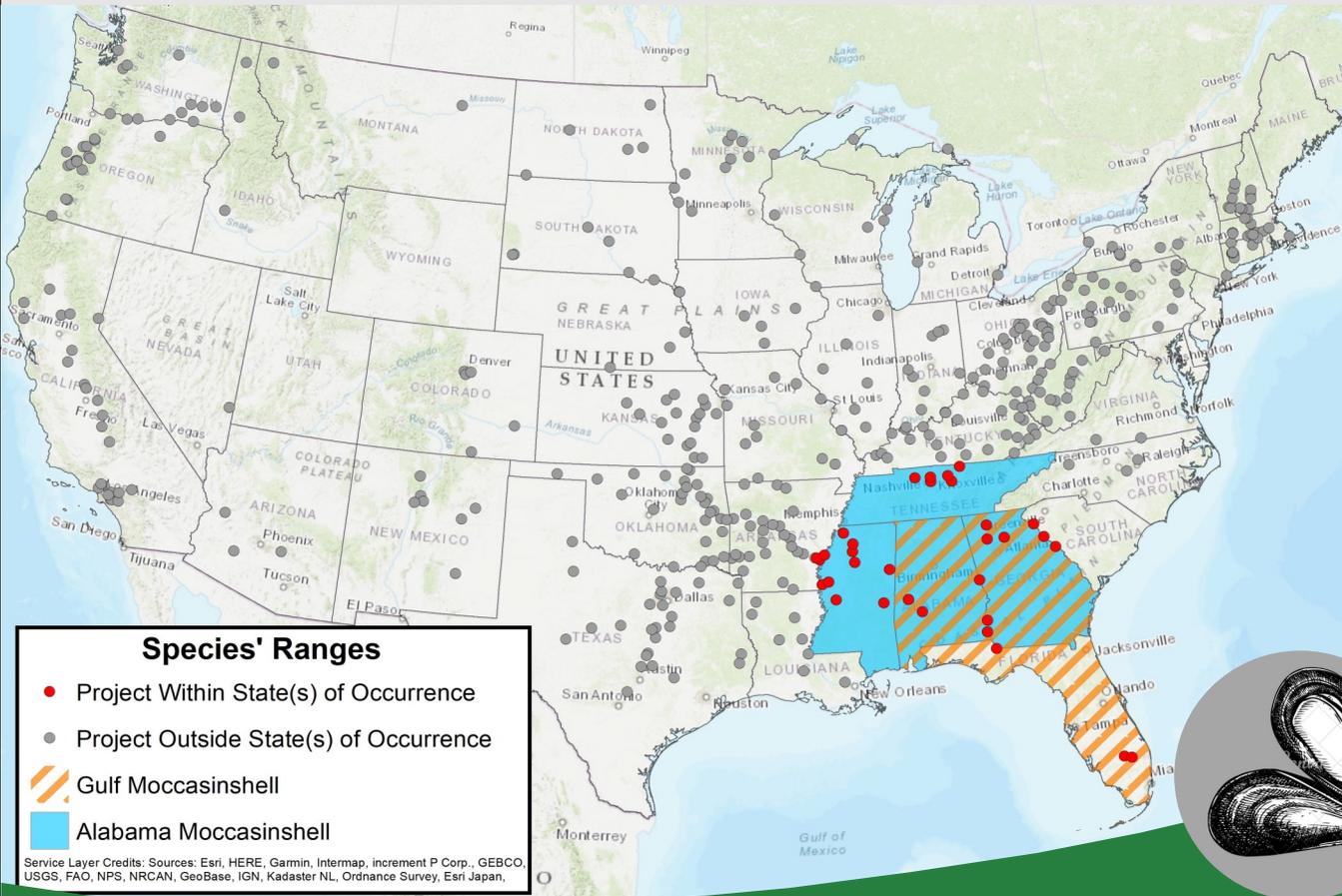
The Gulf moccasinshell has a small range. According to the 2019 NRM Assessment, the Gulf moccasinshell only occurs in Mobile District of the South Atlantic Division. A single project, Jim Woodruff Lock and Dam and Lake Seminole, is noted as having rare occurrences of this mussel.

The Alabama moccasinshell also has a small range which is limited to South Atlantic Division's Mobile District. The Alabama moccasinshell is noted to occur rarely within the Tennessee-Tombigbee Waterway Project waters.

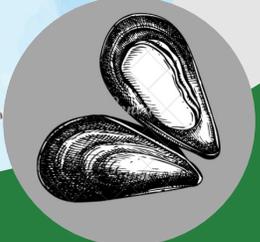


Photo: Tom Bevill Lock and Dam is one of the USACE lock and dam structures on the Tennessee-Tombigbee Waterway.

This fact sheet has been prepared as an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced to provide its readers information about best management practices related to special status species. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.



Source: Map provided by Ashleigh Boss, ORISE Fellowship, Institute for Water Resources



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