

Suwannee Moccasinshell Species Profile

What is it, what's its status and where is it?

- Common name: Suwannee moccasinshell
- Scientific name: *Medionidus walkeri*
- Taxa: Unionidae
- Range: The Suwannee moccasinshell is a freshwater mussel endemic to the Suwannee River Basin in Florida and Georgia. Its historical range includes the lower and middle Suwannee River mainstem, the Santa Fe River sub-basin, and the lower reach of the Withlacoochee River. The species has undergone a reduction in range in recent decades, and may no longer persist at several sites where it historically occurred. Presently, the Suwannee moccasinshell occurs in the lower Santa Fe River, and throughout most of its known range in the Suwannee River mainstem. The species may be extirpated in the Withlacoochee River and in the upper Santa Fe River sub-basin.
- Status: The Suwannee moccasinshell is proposed to be listed as threatened under the Endangered Species Act. An evaluation of historical and recent collection information, suggests that Suwannee moccasinshell numbers are lower now compared to a few decades ago, particularly in the Santa Fe River sub-basin where it currently occurs in exceedingly low abundance. Moccasinshell populations in the mainstem Suwannee River, although low in abundance, appear to be stable at present. Its persistence in the main channel is attributed to the stability of the streambed and habitat, and to higher flow volumes which likely attenuate certain stressors (pollutants, reduced flows).

What's the latest and most urgent news on this species?

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U.S. Fish and Wildlife Service Proposes to Protect Rare Mussel in Suwannee River Basin

While its population appears to have stabilized in the mainstem of the Suwannee River, the Suwannee moccasinshell mussel is declining across the rest of its range and should be protected as a threatened species, the U.S. Fish and Wildlife Service announced today.

Its decline is the result of pollution, sedimentation, and reduced flows in the Suwannee river basin.

The Suwannee moccasinshell is a freshwater mussel only found in the Suwannee River Basin in Florida and Georgia. The primary reason for the species' decline is the degradation of its habitat due to polluted runoff from agricultural lands, discharges from industrial and municipal wastewater sources and mining operations, and decreased flows because of groundwater extraction and drought. In other portions of its range, sedimentation also has impacted its habitat.

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"The Suwannee moccasinshell's decline should serve as a warning to us to take notice of declining clean water in these rivers," said Cindy Dohner, the Service's Southeast Regional Director. "I know Americans value clean water. Mussels are indicators of how clean the water is. A healthy river system means good fishing and clean water for fish, migratory birds, other wildlife, and people."

It is currently known to live in the Suwannee River main channel and the lower Santa Fe River in Florida. An evaluation of historical and recent collection data shows the Suwannee moccasinshell's range has declined in recent decades. It may be extirpated from the Withlacoochee River in Georgia and Florida, and its range and abundance have clearly declined in the Santa Fe River system in Florida, where it is now found only in the lower portion of the Santa Fe River mainstem to exceedingly low numbers.

The Suwannee moccasinshell continues to survive throughout most of its known range in the Suwannee River mainstem, but its numbers are lower now than a few decades ago. Despite their low abundance, populations in the Suwannee River mainstem presently appear to be stable.

There are already other endangered or threatened species in or near the moccasinshell's habitat. The threatened Gulf sturgeon has critical habitat in the main channel Suwannee and Withlacoochee Rivers and the endangered Oval pigtoe mussel has critical habitat in the Santa Fe and New Rivers.

The proposed listing of the moccasinshell is part of the Service's efforts to implement a court-approved work plan aimed at addressing a series of lawsuits concerning the agency's ESA listing program. To learn more about the Service's work plan for 2015, please visit <http://www.fws.gov/southeast/candidateconservation>

The public is invited to submit comments on this proposal through a 60-day comment period ending December 7, 2015. Comments and information may be submitted one of two ways:

1) *Electronically*: Go to the Federal eRulemaking Portal: <http://www.regulations.gov>. In the Search box, enter FWS-R4-ES-2015-0142, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on "Comment Now!"

2) *By hard copy*: Submit by U.S. Mail or hand-delivery to: Public Comments Processing, Attn: FWS-R4-ES-2015-0142; U.S. Fish & Wildlife Service Headquarters, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA, 22041-3803. All relevant information received during the open comment period from the public, government agencies, the scientific community, industry, and any other interested parties, will be considered and addressed in the Service's final listing determination for the Suwannee moccasinshell.

Requests for a public hearing must be made in writing within 45 days by November 20, 2015. To request a public hearing, please contact Dr. Catherine Phillips, Project Leader, U.S. Fish and Wildlife Service, Ecological Services Field Office, 1601 Balboa Avenue, Panama City, Florida, 32405, telephone 850-769-0552.

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American

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What does it look like?

The Suwannee moccasinshell is a small mussel that rarely exceeds 50 millimeters (2.0 inches) in length. Its shell is oval in shape and sculptured with corrugations extending along the posterior ridge, although the corrugations are sometimes faint. The shell exterior (periostracum) is greenish yellow to brown with green rays of varying width and intensity in young individuals, and olive brown to brownish black with rays often obscured in mature. The sexes can be distinguished, with female shells being smaller and longer than the males. The Suwannee moccasinshell is easily distinguished from all other mussels in the Suwannee River Basin by having an oval outline and sculpture on the posterior slope.

Where does it live and what unique characteristics does it require of its environment for survival?

Unionid mussels live in the bottom substrates of streams and lakes where they generally burrow completely into the substrate and orient themselves near the substrate surface to take in food and oxygen. The Suwannee moccasinshell typically inhabits larger streams where it is found in substrates of muddy sand or sand with some gravel, and in areas with slow to moderate current. Recent surveys by the Florida Fish and Wildlife Conservation Commission (FWC) for the species in the Suwannee River main channel found individuals at depths ranging from around 0.5 to 2.5 meters (1.6 to 8.2 ft.). Based on stream conditions in areas that still support the species, suitable Suwannee moccasinshell habitat appears to be clear stream reaches along bank margins with a moderate slope and stable sand substrates, where flow is moderate and slightly depositional conditions exist. These are ideal habitat conditions for most mussels in the main channel, and several species occur in areas where the Suwannee moccasinshell is found. In addition, the Suwannee moccasinshell is associated with large woody material and individuals are often found near embedded logs.

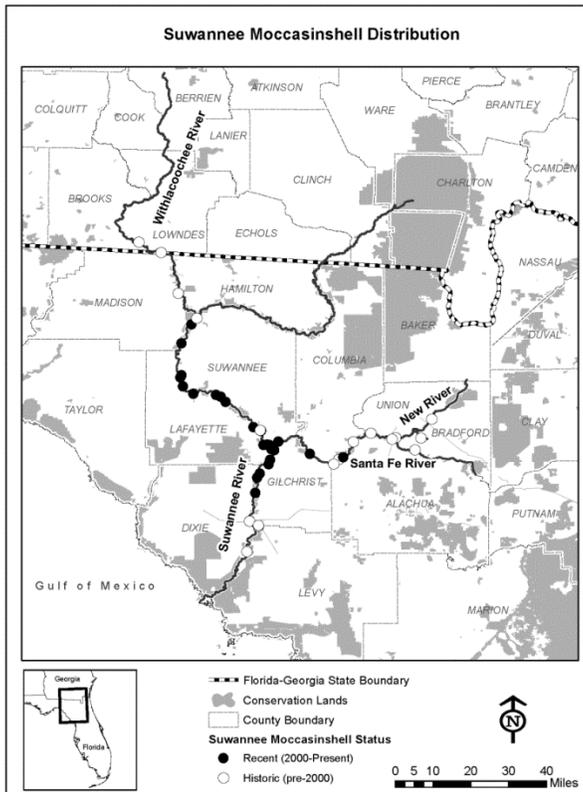
What does it eat?

Adult freshwater mussels obtain food items both from the water column and from the sediments. They filter feed by taking water in through the incurrent siphon and across four gills that are specialized for respiration and food collection. They can also move sediment material into the shell by using cilia (hair-like structures) on the foot or through currents created by cilia. Juvenile mussels typically burrow completely beneath the substrate surface for the first several months of their life. During this time, they feed primarily with their ciliated foot which they sweep through the sediment to extract material, until the structures for filter feeding are more fully developed. Mussels feed on a variety of microscopic food particles that include algae, diatoms, bacteria, and fine detritus (disintegrated organic debris).

Where was it found before it become a proposed species?

The Suwannee moccasinshell's historical range includes the lower and middle Suwannee River mainstem and the Santa Fe River sub-basin in Florida, and the lower reach of the Withlacoochee River in Georgia and Florida.

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Where is it found now?

Presently, the Suwannee moccasinshell occurs in the lower Santa Fe River, and the lower and middle Suwannee River mainstem in Madison, Suwannee, Lafayette, Gilchrist, Dixie, Levy, Columbia, Alachua, Union, and Bradford Counties, Florida.

What's being done to recover it?

The Service has coordinated with Federal and State agencies including the Florida Fish and Wildlife Conservation Commission, the Georgia Department of Natural Resources (GDNR), and the U.S. Geological Survey (USGS). The FWC and GDNR have conducted recent surveys within the Florida portions of the Suwannee River basin, and their assistance has provided critical information on the current status and distribution of the species. The Service has collaborated with the USGS to fund life history research on the Suwannee moccasinshell and the preliminary information from that research is presented in the proposed listing rule.

What threats does it face/what's bad for this species?

The primary reason for the Suwannee moccasinshell's decline is the degradation of its stream habitat due to polluted runoff from agricultural lands, discharges from industrial and municipal wastewater sources and from mining operations, and decreased flows due to groundwater extraction and drought. These threats occur throughout its range, but are more intense in the two tributaries, the Withlacoochee and Santa Fe River systems. In portions its range, sedimentation has also impacted its habitat. Other threats to the species include contaminant spills as a result of transportation accidents or from industrial, agricultural, and municipal facilities; increased

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drought frequency and temperatures in the future as a result of climate change; greater vulnerability to certain threats because of its small population size and range; and competition and disturbance from the introduced Asian clam.

What can I do to help?

Actions that reduce pollution and siltation into surface and groundwater will help any river stay clean. Landowners who wish to help this species recover should consider best management practices when applying pesticides, fertilizers, and irrigation water. Also, keeping or planting buffering vegetation along stream corridors will help filter runoff. This can also serve to reduce lost soil to erosion, an added benefit. Agricultural practices that reduce pollution and conserve water and soil also increase productivity and save farmers and ranchers money in the long run. Cities and towns in the basin can work to retain buffers and greenspaces along streams.

Who can I talk to to learn more?

- Sandra Pursifull, Ecologist, Panama City Field Office, Sandra_pursifull@fws.gov, 850-769-0552 ext. 240
- Catherine Phillips, Project Leader, Panama City Field Office, Catherine_phillips@fws.gov, 850-769-0552 ext. 242

Who else is working to conserve this species?

- The Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute in (FWRI) in Gainesville <http://myfwc.com/research/about/information/welcome/>
- The U.S. Geological Survey's Southeast Ecological Science Center in Gainesville <http://fl.biology.usgs.gov/>

Where are all the published rules and regulations on this species?

- Automatic Federal Register feed - no action required