

# USACE Natural Resource Management

## Freshwater Mussels



### White Wartyback, Orangefoot Pimpleback, & Sheepnose Mussel

**White Wartyback (*Plethobasus cicatricosus*):** This species shell has a subovate outline. The shell is thick, solid, and moderately inflated. The beak is full, turned partly forward, and positioned high. The outer shell is a green yellow or yellow brown color and lacks rays. The shell is marked with low, uneven, concentric growth lines. (USFWS)

**Status:** Endangered, listed 1976

**Nature Serve:** Critically Imperiled

G1  
Critically  
Imperiled

**Orangefoot Pimpleback (*Plethobasus cooperianus*):** This species grows up to 3.7 inches long, 3 inches high, and 1.8 inches wide. The shell shape is nearly circular or subround. The outer shell ranges from yellowish brown to rusty or chestnut brown and darkens as the mussel ages. Faint, greenish rays are visible in younger specimens. (USFWS)

**Status:** Endangered, listed 1976

**Nature Serve:** Critically Imperiled

G1  
Critically  
Imperiled

**Sheepnose Mussel (*Plethobasus cyphus*):** Much of this species' shell surface is smooth and looks slightly pressed-in from the beak to the shell edge. From the beak to the opposite shell edge there are many low, wide bumps that run in a line down the outer shell surface. (USFWS)

**Status:** Endangered, listed 2012

**Nature Serve:** Vulnerable

G3  
Vulnerable

**Genus: *Plethobasus*** is a genus of freshwater mussels in the family *Unionoida*. (NatureServe) This genus was first described in 1900 by Simpson and presently has three taxonomically valid species. (*Integrated Taxonomic Information System*)

Photos Left to Right:  
White Wartyback (USFWS), Orangefoot Pimpleback (Kentucky DFWR), Sheepnose Mussel (USFWS), & Sheepnose Mussel (USFWS)

#### Management and Protection:

- The white wartyback is found in clean, fast-flowing water among gravel and sand bottoms of large rivers with no silt. Unfortunately, dams and reservoirs have flooded most of this mussel's habitat. (USFWS)
- No living populations of the white wartyback have been found since the 1960s, though fresh dead specimens were found in both 1979 and 1982. The only known extant population might occur in the tailwaters of Wilson Dam located in northwest Alabama along the Tennessee River. (NatureServe)
- The range of the orangefoot pimpleback has been reduced by 70%. Remaining populations are small and exist in widely disjunct, localized beds. (NatureServe)
- The orangefoot pimpleback has been found in waters as deeps as 29 feet. However, dams and impoundments have flooded most of this species' habitat beyond that depth. Dams and impoundments have also altered the distribution of host fish. (USFWS)
  - The sheepnose mussel has been extirpated from over 60% of the total number of streams from which it was historically known. (USFWS)



**USACE ROLE:** According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over \$2,557,414 on efforts related to these species. These costs have been incurred by multiple business lines including Regulatory, Water Supply, Navigation, Hydropower, and Environmental Stewardship. Expense types include Coordination and Determination, Site Visits and Inspections, Research, Inventory, Survey, and Monitoring, and Species Protection.



**White Wartyback = \$110,334 (2005)**



**Orangefoot Pimpleback = \$1,792,246 (2005)**



**Sheepnose Mussel = \$654,834 (2009)**

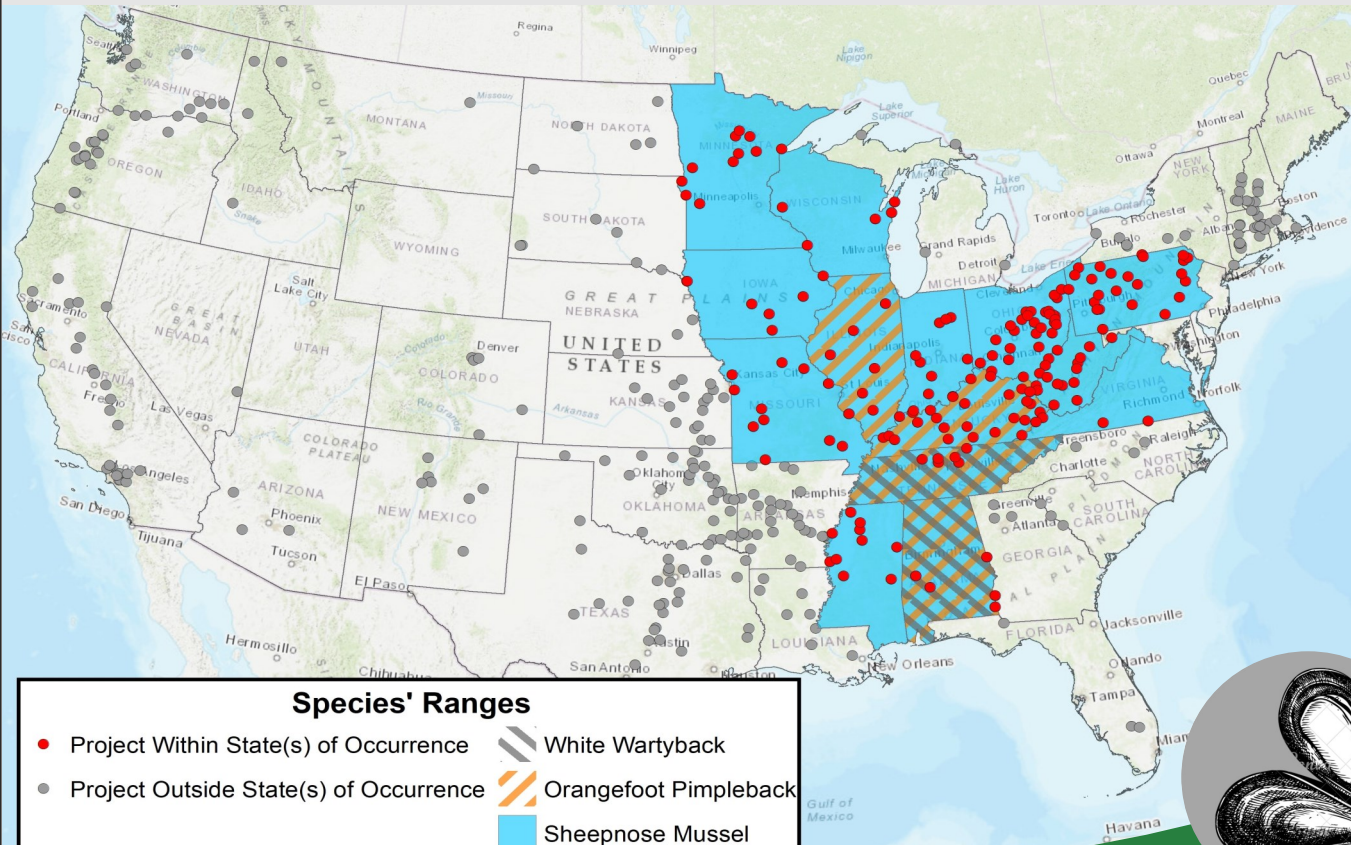
The 2019 NRM Assessment four projects, all within the Great Lakes and Ohio River Division, were listed as having the potential for the orangefoot pimpleback to occur.

The sheepnose mussel was listed by multiple projects in both the Great Lakes and Ohio River and Mississippi River Valley Divisions in 2019 NRM Assessment. Twelve projects noted the potential for the species to occur while two projects noted that the species is known to occur rarely.



Photo: Mark Twain Lake of St. Louis District is one of the two projects with rare occurrences of the sheepnose mussel.

*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.*



**Species' Ranges**

- Project Within State(s) of Occurrence
- Project Outside State(s) of Occurrence
- White Wartyback
- Orangefoot Pimpleback
- Sheepnose Mussel

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



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