

USACE Natural Resource Management Freshwater Mussels



Catspaw, Purple Catspaw, and White Catspaw

Catspaw (*Epioblasma obliquata*): This mussel can grow up to 2 inches long. Females are rectangular or quadrate while males are elongate and oval. In males, the posterior ridge has a wide depression between double ridges. In females, the ridge is narrow and sharp.

Status: Not listed

Nature Serve: Critically Imperiled

Purple Catspaw (*Epioblasma obliquata obliquata*): Considered to be one of the rarest freshwater mussel species. These mussels are medium-sized and roughly rectangular. The outside has distinct growth lines, fine wavy green rays, and a smooth, shiny surface that is yellow-green, yellow, or brownish in color. The inside is purple to deep purple.

Status: Endangered, listed 1990

Nature Serve: Not Listed

White Catspaw (*Epioblasma obliquata perobliqua*): This mussel is small to medium sized. The outer shell is greenish yellow to greenish brown and has regular, fine green rays. Inner shell is white. Males are irregularly ovate with a narrow, shallow sulcus just anterior to the posterior ridge.

Status: Endangered, listed 1976

Nature Serve: Critically Imperiled



Genus: *Epioblasma* is a genus of freshwater mussels in the family Unionidae. The entire genus is imperiled and 15 species or subspecies are thought to be extinct. Many of the species and subspecies within the genus are federally listed. (Missouri State University)



Photos L to R: Purple Catspaw (USFWS), White Catspaw external (USFWS) and White Catspaw Internal (USFWS)

Management and Protection: Like many freshwater mussel species, conservation challenges stem from industrial and agricultural developments which result in environmental changes.

- Construction of dams can isolate populations, block host fish migration routes, and cause changes in water temperature which alter mussels' natural biological timers.
- Activities such as logging and mining can increase siltation in flowing river systems which may bury mussels and eventually lead to suffocation.
- Water pollution stemming from agricultural runoff and/or industrial pollution can result in the death of mussels. These pollutants can also contribute to algal blooms which negatively impact mussels by usurping oxygen and preventing water flow. (USFWS)
- Recent literature on climate change includes predictions of hydrological changes. Altered hydrology has the potential to negatively impact mussel species.
- Gravel dredging of rivers disturbs habitat and negatively impacts the purple catspaw. (USFWS)
 - The white catspaw has been negatively impacted by intensive agricultural practices which result in increased erosion and topsoil runoff that smothers mussels. Moreover, pesticides and fertilizers in this runoff have also poisoned some mussels.



USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over \$115,000 on efforts related to white catspaw and purple catspaw. The costs associated with white catspaw and purple catspaw have been incurred by multiple business lines including Navigation, Planning and Program Management, and Regulatory. Catspaw is not federally listed and therefore not tracked in this database.

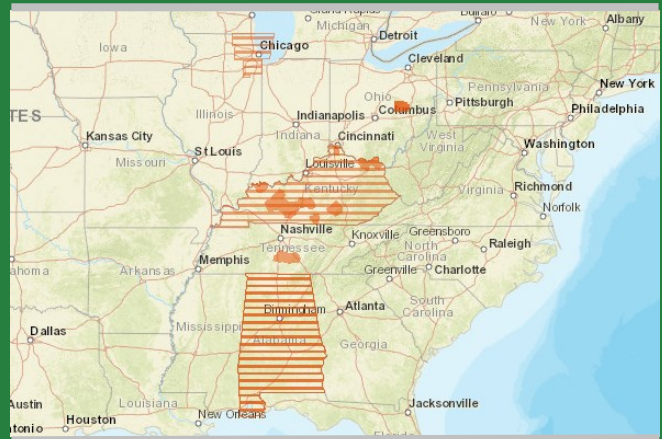


White Catspaw= \$58,000



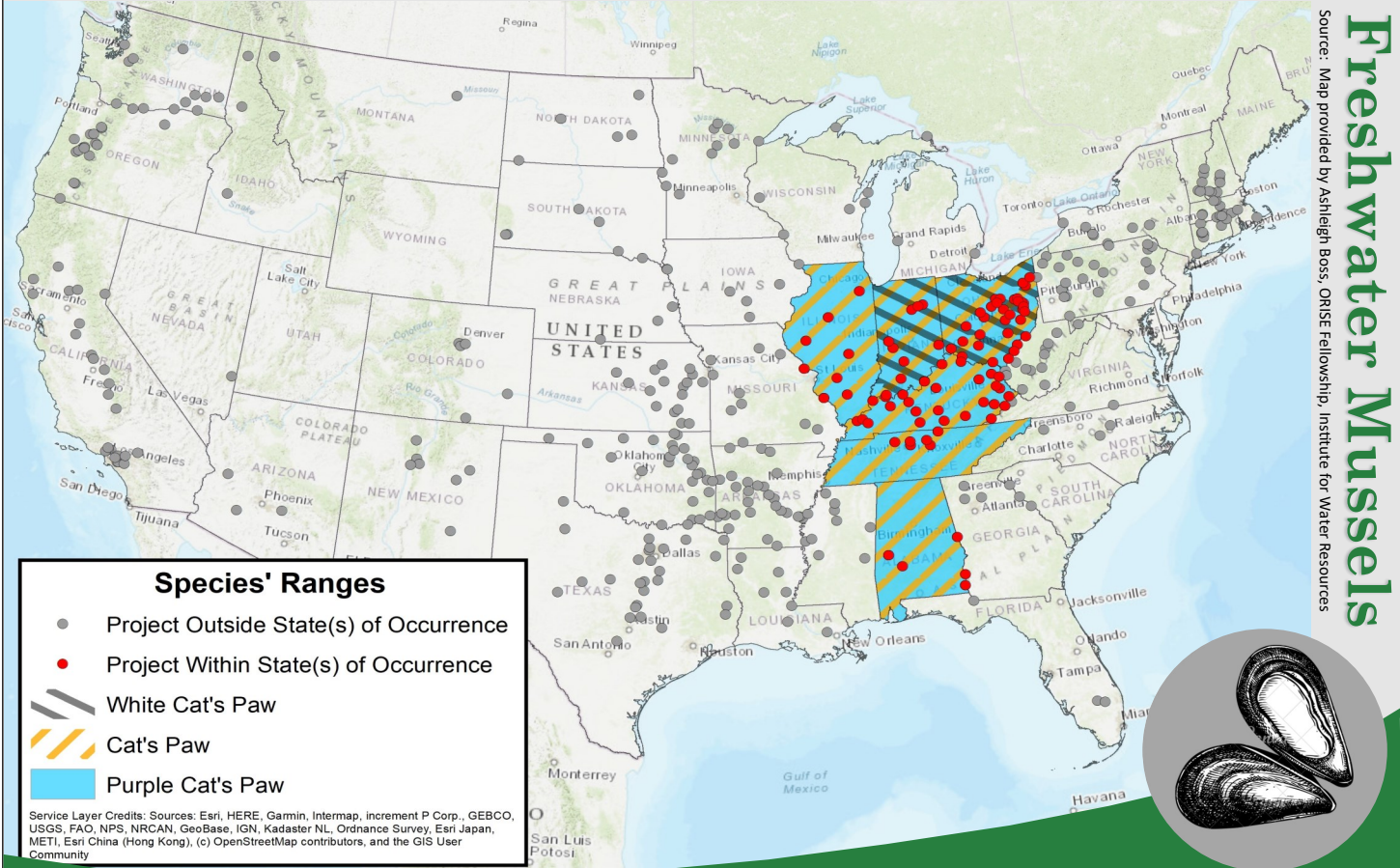
Purple Catspaw= \$57,000

Much of the range of the catspaw and its two sub-species, white catspaw and purple catspaw, falls within the jurisdiction of the USACE's Great Lakes and Ohio River Division, but other divisions with the potential for these mussels to occur include South Atlantic and Mississippi Valley Division. Across the species' ranges, the USACE works closely with U.S. Fish and Wildlife Service and other natural resource management agencies to ensure that or current or proposed work will have negative impacts on the mussels.



Graphic: Range for the purple catspaw in ECOS. (USFWS)

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.



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

